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ABSTRACT

A large scale satellite-based telecommunications system has the capabilities of delivering educational programs to large numbers of people over a wide geographic area. However, to implement such a widespread system requires the definition of broad curricular areas and the delineation of institutional settings. This lengthy memorandum investigates the current status of both vocational/technical education and adult education throughout the United States. Vocational/technical education patterns of enrollment reveal that the growth potential at least through 1975 is good, and that the most fertile area for telecommunications is in career education orientation and teacher training. Telecommunications has the most utility in compensatory adult education. This approach is in use in rural areas of Wisconsin and Kentucky and has been considered by the Corporation for Public Broadcasting as a viable means of either increasing the viewer's coping skills or preparing him for high school equivalency examinations. The investigation is based on extensive surveys and is intended for those involved with telecommunication systems design. (MC)

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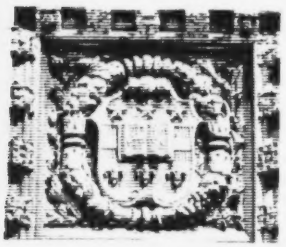

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VOCATIONAL/TECHNICAL AND ADULT EDUCATION: STATUS, TRENDS, AND ISSUES RELATED TO ELECTRONIC DELIVERY

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PROGRAM ON APPLICATION OF COMMUNICATIONS SATELLITES
TO EDUCATIONAL DEVELOPMENT

Center for Development Technology
Washington University

Memorandum No. 73/1 January, 1973

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VOCATIONAL/TECHNICAL AND ADULT EDUCATION: STATUS, TRENDS, AND ISSUES RELATED TO ELECTRONIC DELIVERY

DONNA ROTHENBERG

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TABLE OF CONTENTS

No. Page

Summary. vi

1. Introduction and Definition of Terms 1

1.1 Definition of Vocational/Technical and Career Education. 2

1.2 Definition of Adult Education 3

1.2.1 Adult Basic Education. 3
1.2.2 Adult Education. 4
1.2.3 Adult/Continuing Education 4

2. Vocational/Technical Education: Current Status. 5

2.1 Distinction Between Instruction Within Formal Educational Structures and Instruction Outside Formal Educational Structures 6

2.2 Secondary Level Vocational/Technical Education. 7

2.3 Post-Secondary Level Vocational/Technical Education . . 8

2.4 Adult Level Vocational/Technical Education. 9

2.5 Conclusions on Instruction within Formal Educational Structures. 10

2.6 Correspondence Schools: Extension Divisions and Proprietary Schools 11

2.7 Proprietary Vocational/Technical Schools. 14

2.7.1 Concentration of Ownership of Proprietary Vocational/Technical Schools 17

2.8 Profile of Vocational/Technical Education Students. . . 18

2.8.1 Location of Students and Institutions. 18
2.8.2 Demographics of Students 20

3. Vocational/Technical Education: Issues. 23

3.1 Renewed Interest in Vocational/Technical Education. . . 23

No. Page

3.2 Funding Sources for Vocational/Technical Education. . . 23

3.3 Pedagogic Changes Within Vocational/Technical Education 24

3.4 Department of Labor Efforts to Develop a Computerized Job Bank and Forecasting Network. 25

3.5 Effectiveness of Vocational/Technical Education 25

3.5.1 Effectiveness Measured by Occupational Placement. 26
3.5.2 Effectiveness Measured by Labor Market Realities and Projections. 27

3.6 Trends and Issues Concerning Institutions Outside Formal Educational Structures 31

4. The Media In, and Costs Of, Vocational/Technical/Career Education. 35

4.1 Multi-Media: The Federation of Rocky Mountain States Experiment 35

4.2 Computerized Vocational Guidance and Information Systems 36

4.3 Media Use For Occupationally-Specific Curricula 37

4.3.1 The Southern California Regional Occupational Center 37
4.3.2 Project REACT. 38
4.3.3 Suitability of Military Vocational/Technical Training Materials and Techniques for Civilian Educational Use 38

5. Conclusions Regarding the Prospects of Large-Scale Electronic Delivery of Vocational/Technical Education. . . . 41

5.1 Infrastructure. 41

5.2 Pedagogic Changes 43

5.3 Location of Students and Orientation of Teachers. . . . 43

5.4 General Comments. 46

5.4.1 Occupationally-Specific Curricula. 46
5.4.2 Career Curricula 47
5.4.3 Additional Comments. 47

No. Page

6. Adult Education: Introduction and Current Status. 49

6.1 Adult Basic Education 49

6.1.1 Demographics of the Student Body 50
6.1.2 Geographic Areas of Strength for Adult Basic Education. 51
6.1.3 Location of Adult Basic Education Classes. . . . 53

6.2 Adult Education 53

6.2.1 Demographics of the Adult Education Student Body 53
6.2.2 Sources of Adult Education Instruction 54

6.3 Adult/Continuing Education. 54

6.3.1 Type of Institution Offering Adult/Continuing Education. 55
6.3.2 Type of Instruction Available in Adult/ Continuing Education 56

7. The Media in Adult Education 58

7.1 "RFD" 58

7.2 The Project of the Kentucky Authority for Educational Television (K.E.T.) 60

7.3 Project Strive of ALPS. 61

7.4 TV and Computers in Adult Basic Education 62

8. Conclusions Regarding the Prospects of Large-Scale Electronic Delivery of Adult Education 63

Bibliography 65

Appendix A: Participation in Federal Programs 78

Appendix B: Fact Sheet - The Federal Program of Vocational and Technical Education 80

Appendix C: Glossary. 83

Appendix D: Fact Sheet - The Office of Education Program of Adult Education 87

LIST OF TABLES

No.		Page
1.	Expenditures from Vocational Education Act of 1963 Funds, By Purpose.	5a
2.	Enrollment in Vocational Education, By Level and Program . .	9a
3.	Estimated Correspondence Study Student Body and Enrollments by Institutional Suppliers for 1965.	11a
4.	Completion Rates of Veterans Enrolled in Correspondence Courses.	13a
5.	Proprietary Vocational Schools by Type	15a
6.	Total Expenditures for Vocational Education by Object; Total Vocational Education Expenditures by Location.	18a
7.	Civilian Labor Force 22-64 who Completed less than three Years of College: Their Training for Current Job and Appraisal of that Training	28a
8.	Replacement Needs for Skilled Workers in the U.S. In Trades Having Apprentices: Proportions Met Annually by Various Training Programs.	28b
9.	Apprenticeship and Schooling Compared for Selected Crafts: U.S.A., 1963.	28c
10.	New Enrollments in Federally Assisted Work and Training Programs	29a

LIST OF FIGURES

1.	A Model of Career Education.	2a
2.	The Office of Education's 15 Occupational Clusters	3a
3.	Geographic Areas of Strength for Adult Basic Education . . .	51a

SUMMARY: VOCATIONAL/TECHNICAL AND ADULT EDUCATION: STATUS, TRENDS, AND ISSUES RELATED TO ELECTRONIC DELIVERY

This report is devoted to the status of, and trends and issues within, vocational/technical and adult education which are related to the possibilities of electronic delivery of these educational services. This study is part of a broader investigation of the role of large-scale satellite-based telecommunications systems. Thus, data is analyzed and trends and issues discussed to provide information useful to the systems designer who wishes to identify and assess the opportunities for large-scale electronic delivery in vocational/technical and adult education.

The traditional approach to occupational training has usually been referred to as "vocational and technical education," indicating formalized instruction to either prepare students to enter an occupation that requires less training than a bachelor's degree or to retrain them. Vocational/technical education normally occurs at three instructional levels: 1) the secondary, or high school, level, 2) the post-secondary, or post high school, level, and 3) the adult level, involving students beyond the compulsory school age of 16 and not enrolled in a formal educational program. Instruction, at any level, may occur in public or private educational institutions, at work, in residential schools, or in the military establishment. Currently there is interest in the prospects for vocational/technical instruction in the home. "Career education," a developing concept of intense interest today, presents the possibilities of restructuring American education and encompassing vocational/technical education. Career education, in its fullest implementation, is a continuing effort throughout the individual's schooling and extending into his working life to make him aware of occupational options and to aid him in achieving the skills of his choice.

Adult education refers to educational experiences designed for people 16 years of age and older who are not enrolled in school on a full-time basis. Adult education may be further subdivided into three categories: 1) adult education, legislatively defined specifically to imply compensatory education through the twelfth-grade level, 2) adult basic education, compensatory education specifically designed to remedy lack of facility with the English language and/or lack of an eighth-grade education, and 3) adult/continuing education, the broadest of the subcategories with its emphasis upon the continuing nature of educational services and instruction. Adult/continuing education implies that no credit or certification will be automatically awarded for participation, making enrollment a voluntary effort to meet a need or satisfy a desire.

In 1970, there were 8,793,960 students enrolled in vocational/technical education programs at all instructional levels. The majority

of the students, 5,114,451, were enrolled at the secondary level. 2,666,083 students were involved at the adult level. 1,013,426 students participated at the post-secondary level. Included within the total vocational/technical enrollment are the 920,603 students of "special needs;" 805,384 of whom are classified as "disadvantaged," the remaining 115,219 students classified as "handicapped." These enrollment figures, compiled by the federal government from data supplied by the states, do not reflect the numbers of students in proprietary vocational schools. Estimates of proprietary school enrollment range from 35,000 such schools serving a student population of more than 5 million advanced by Clark and Sloan in 1964, to Belitsky's 1966 survey which estimated 7,000 institutions serving one and a half million students. Enrollment in proprietary correspondence schools would swell these figures.

Growth potential for vocational/technical education is considered good. Projected vocational/technical education enrollment at public institutions for 1975 is expected to equal 13,800,000 students, of whom 8,247,000 will be enrolled at the secondary level; 1,830,000 will be enrolled at the post-secondary level; 3,723,000 will be enrolled at the adult level; included in these estimates are students with "special needs" (the handicapped and the disadvantaged) who will equal 1,412,000 enrollees. The outlook for private vocational schools also indicates growth. The Education Amendments passed by Congress in June, 1972, direct the states to establish/designate a state agency to coordinate all institutions of higher education (including proprietary vocational schools) within their boundaries as a means of implementing the maximum optimization of educational opportunities for their citizens.

The use of large-scale telecommunications for vocational/technical education is dependent upon a number of considerations. Primary among them is finding either a curricular area broad enough for wide application or utilizing the existing vocational education information dissemination infrastructure so that knowledge of materials available may spread and inspire increased usage. A related consideration is that institutions offering vocational/technical/career education pool their resources so that expensive facilities necessary for wide-spread telecommunications (i.e., computer networks, television receivers) may be profitably employed. Currently, the most fertile areas for wide-scale telecommunications appear to be the career education orientation curriculum and data banks on occupational placement. Career orientation is suitable for both television programming (as evidenced by the current plans of the Federation of Rocky Mountain States to program career education in its experiment with the ATS-F satellite over its eight-state region), and computerized instruction, particularly vocational counseling (as evidenced by the CVIS and SIGI curricula currently in limited use and development, respectively). Another application of telecommunications in vocational/technical education is teacher training and teacher follow up. This application also will be tested by the Rocky Mountain experiment.

There are fewer examples of media instruction for occupationally-specific curricula. The Southern California Regional Occupational Center, a consortium of seven school districts serving 25 high schools, utilizes computer management of self contained, multi-media instructional packages. The United States military trains men for specific occupations with heavy audio-visual input. Applicability of military courses to civilian classrooms has been tried by Hill Air Force Base and the state of Utah. Military materials, heavily audio-visual in nature, were found suitable to civilian instruction.

The United States government estimates that 13,150,000 adult Americans participated in adult educational activities for the year ending in May, 1969. This figure includes full-time students who were outside the scope of this report. Enrollment figures for categories of adult education used within this report are: 1) adult basic education, 535,613 enrollees for FY 1970, 2) adult education (twelfth grade competency), is difficult to gauge the extent of eligibility and participation, and 3) adult/continuing education, 6,500,000 enrollees during 1967-68, of which 5,600,000 were engaged in noncredit activities.

Included within the FY 1970 adult basic education enrollment were 61,226 institutionalized students; increased enrollments in hospitals (9,571 students) and correctional facilities (32,536 students) were recorded. Geographically, adult basic enrollment was heaviest in California, Florida, Illinois, North Carolina, and Texas, which registered 34% of the national total. Adult basic education classes are offered in a variety of locations; correctional facilities, hospitals, community structures such as churches, community centers, and schools, and on-the-job locations such as plants. During FY 1970 there was a decrease in the types of facilities employed. Use of public school classes decreased 36% to 23,202 units while use of other types of facilities decreased 54% to 7,200 units. Concurrently, there was a decrease in the total number of adult basic education classes while the ratio of students-per-class rose from 10 to 17. Programmed instruction is used in adult basic education, although statistics do not indicate if programmed instruction was achieved with electronic means. However, sixteen states reported that 50% of their adult basic education classes were receiving programmed instruction.

Statistics offered for adult education are projections to determine the sources used by Americans 17 years of age and over who participated in some form of continuing education. Adult education may be offered in seven possible settings: public or private schools, job training, correspondence courses, private instruction, part-time college/university attendance, community organizations, and "other" sources. A school setting was the most-frequented source of instruction with 27.7% of the adult education participants. Job training enrolled 27.5% of adult education enrollees: 13.4% participated via community organizations; 8% enrolled in correspondence courses; 5.8% were tutored; 10.3% engaged in other forms of participation. Utilization of more than one source was found to be most prevalent among those elements of the population most involved.

Adult/continuing education registers most of its students at public institutions; 86.4% of all registrants, or 4.9 million students, were registered at publicly-controlled schools, most likely universities. Television and/or radio was the primary teaching medium for over 6.5% of the adult/continuing education in the public sector and 3% in the private sector. When electronic media were utilized in noncredit instruction, regardless how the institution was controlled, broadcast television was most popular in 2-year institutions, followed by universities, and least used by "other" 4-year institutions. Broadcase radio was most used by "other" 4-year institutions, then by universities, and least used by 2-year institutions. Closed-circuit television was used minimally by all institutions; both universities and "other" 4-year institutions utilized closed-circuit television for 4% of their electronic instruction, while 2-year institutions used it only 2%. Closed-circuit radio was the least-used of the instructional media; all three types of institutions used it only 1% of the time they utilized instructional media. Broadcast television far outstrips use of closed-circuit television in adult/continuing education teaching situations.

Three examples may be cited of the use of large-scale telecommunications in adult education of a compensatory nature. All three examples, whatever their stage of development, have four elements in common: 1) all are multi-media adult education packages (use of accompanying print materials, radio), 2) all use a human component (i.e., one program used a paraprofessional home visitor), 3) utilization, to some extent, of the existing structure within individual communities for adult education, and 4) the structure of the learning package, particularly the ITV component, allowing maximum flexibility in viewing habits without penalty in skill acquisition.

"RFD," the only example aired thus far, was developed by the University of Wisconsin Extension Division at Madison and beamed to the surrounding four rural counties. The instructional goal was to impart living skills and basic academic skills in a low-key manner. The program package reached its target audience with a half-hour weekly television program, weekly radio spots, a monthly publication, access to a toll-free Action Line, home visits by paraprofessionals, and specially-created learning materials for basic academic skills available upon request of the viewer. Although the program did attract an enthusiastic following among its target audience, it also attracted an urban, well-educated viewership. Results indicated that the home visitor had limited effect upon the viewer's acquisition of coping skills.

In 1972, the Corporation for Public Broadcasting presented plans for Project STRIVE of ALPS. ALPS stands for the Adult Learning Program Service, a subsidiary of the Corporation for Public Broadcasting. Project STRIVE, the first attempt for ALPS, will try to reach those Americans with some high school but lacking a diploma, an audience estimated at 8.1 million. A multi-media learning package of national television broadcasts, locally-produced reinforcement programming,

accompanying printed materials, radio spots, plus organization of local viewing groups, STRIVE's ultimate objective is to give its viewers skills that will increase their confidence and increase their interest in continuing their education. STRIVE will not prepare its audience for the high school equivalency examination. There appears to be some uncertainty as to whether STRIVE will move forward as originally planned for a late 1973 debut.

The Kentucky Authority for Educational Television (K.E.T.) is currently engaged in development of a project to prepare viewers for the high school equivalency exam. K.E.T. estimates a state-wide audience of 1,422,509. The K.E.T. is working with representatives of the Corporation for Public Broadcasting, the Kentucky state Bureaus of Instruction and Vocational Education, and adult education teachers from the Appalachian counties of the state to develop the best ITV strategies, identify and locate the target audience, develop effective liaisons with other agencies involved in adult education, and to develop a full range of utilization components.

The prospects for large-scale electronic delivery of adult education appear to be good. The market for compensatory adult education, or instruction designed to overcome previous educational deficiencies, can be quantified in the millions. Delivery points for adult compensatory education include: 1) an institutional setting, meaning anyplace a viewing group for instructional purposes may be organized, 2) the home setting, and 3) the school setting in which adult educators are trained. Adult education does not face quite the same problems in public imagery as does vocational/technical education. Good promotion, making the concept ubiquitous, could immeasurably aid public acceptance and utilization of large-scale delivery systems. Literature accompanying "RFD" noted a crucial consideration for efforts of this kind; learning in the privacy of one's home could promote participation since the stigma of being publicly identified as "undereducated" would not be a burden.

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1. Introduction and Definition of Terms

This memorandum is devoted to the status of, and trends and issues within, vocational/technical and adult education which are related to the possibilities of electronic delivery of these educational services involving media and educational technology. This study is part of a broader investigation of the role of large-scale satellite-based telecommunications systems. Thus, data is analyzed and trends and issues discussed to provide information useful to the systems designer who wishes to identify and assess the opportunities for large-scale electronic delivery in vocational/technical and adult education.

Following the definition of terms, the memorandum proceeds to examine the current status of vocational/technical education in chapter 2. Distinction is made between vocational/technical instruction offered within the formal educational structure and occupational instruction offered by private proprietary schools outside of the formal educational structure. Enrollment is examined by level of instruction in dealing with public vocational/technical education, and by type of institution in dealing with private vocational/technical education (i.e., correspondence school or classroom instruction at a proprietary school). The chapter ends with an examination of vocational education students, their demographic profile and location.

In chapter 3, issues connected with vocational/technical education are investigated, with emphasis on those issues in the current spotlight which are relevant to the possibilities of electronic delivery. Issues meriting attention are: renewed attention being paid to vocational/technical education by the United States Office of Education and the Congress, the related topic of funding sources for vocational/technical education, pedagogic changes within the field with particular emphasis on the development of Career Education, and the effectiveness of vocational/technical education.

The fourth chapter examines the current role of media in vocational/technical instruction. Attention is initially given to broadly-based curricula with wide applicability, such as the career orientation programming being developed by the Federation of Rocky Mountain States and CAI curricula designed to aid the student in career decision making and to implement vocational counseling. Attention is also given to media usage in occupationally-specific curricular instruction. Chapter four also examines the costs of vocational/technical education.

The fifth chapter of the memorandum presents conclusions concerning vocational/technical education. Trends and issues affecting the suitability of vocational/technical education for large-scale electronic delivery are discussed. Items include the utilization of the existing infrastructure for information dissemination which serves the vocational/technical education professional community, the trend of pedagogic change within the discipline, and the location of students and orientation of teachers.

The remaining chapters of the memorandum are devoted to adult education. The current status of adult basic, adult, and adult/continuing education is presented in chapter 6. Attention is focussed upon enrollment figures, the demographics of the student body, and pinpointing the source(s) of instruction.

Chapter seven is devoted to the media in adult education. Three projects representing wide-scale application of telecommunications to this educational field are examined. One project, "RFD", has already been aired; the remaining projects, Project STRIVE and the K.E.T. effort, are still on the drawingboards.

The final section of the memorandum, chapter eight, presents conclusions regarding the suitability of electronic delivery of adult education.

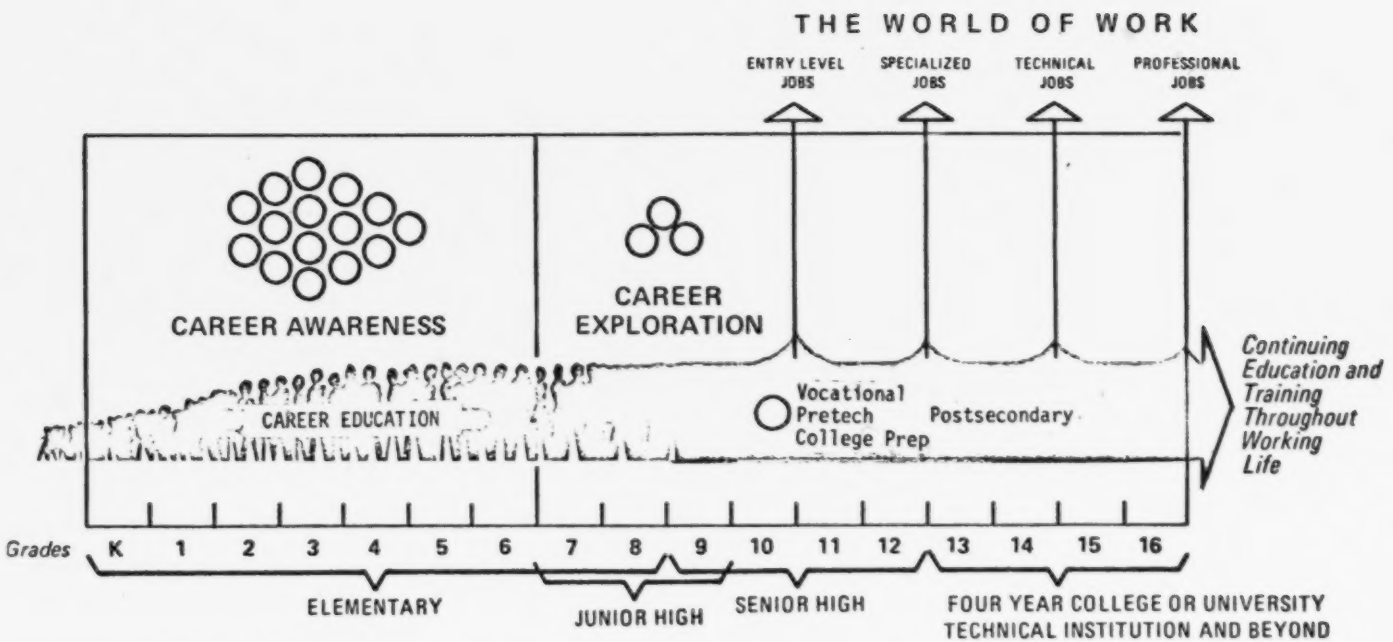
1.1 Definition of Vocational/Technical and Career Education

The traditional approach to occupational training has usually been referred to as "vocational and technical education," indicating formalized instruction to either prepare students to enter an occupation requiring less training than a bachelor's degree, or to retrain them. Two notions embodied in this definition deserve specific attention: 1) an individual is trained for either entry-level placement in an occupation or retrained for occupational change or employment advancement, and 2) the academic boundaries are delineated so that instruction, while formal, is not to be equated with a baccalaureate degree.[1] Vocational/technical education normally occurs at three instructional levels: 1) the secondary, or high school, level, 2) the post-secondary, or post high school, level, and 3) the adult level, involving students beyond the compulsory school age of 16 and not enrolled in a formal educational program. Instruction, at any level, may occur in public or private educational institutions, at work, in residential schools, or in the military establishment. Currently there is interest in the prospects for vocational/technical instruction in the home.

"Career education," a developing concept of intense interest today, presents the possibilities of restructuring American education and encompassing vocational/technical education. Career education, in its fullest implementation, is a continuing effort throughout the individual's schooling and extending into his working life to make him aware of occupational options and to aid him in achieving the skills of his choice. Additional emphasis is upon showing the individual how he will fit into the modern technological world and upon giving him the concommitant respect for his chosen place as a productive member of society.[2] Figure I illustrates the manner in which career education would be integrated within the existing educational sequence;

FIGURE 1

A MODEL OF CAREER EDUCATION



Source: United States, Department of Health, Education, and Welfare, Office of Education, Career Education (Washington, D.C.: Government Printing Office: 1971), p. 5.

it is not intended to be terminal education below the college level. The in-school population will be exposed to career options and training, but the student has the option of continuing his education to the college level and beyond. However, the introduction of a comprehensive career education program within the schools may herald the phase-out of the general curriculum. The general curriculum is a high school course of academic study, lodged between college prep and vocational education, which neither equips students for college entrance nor trains them to have a salable skill.[3]

It should be noted that United States Commissioner of Education Sidney Marland, Jr., candidly informed the 1971 Annual Convention of the American Vocational Association that "career education is the major objective of the Office of Education at this moment in time and will remain so for the foreseeable future."[4]

Another new curricular concept affecting vocational/technical education is clustering. The nucleus of the clustering idea is that many occupations, though separate, are similar enough in basic skills and knowledge core required to fall into one related occupational cluster. Figure II illustrates the Office of Education's 15 occupational clusters. Proponents of clustering cite advantages from both school and student perspectives. From a student's standpoint, clustering offers more flexibility without undue loss of orientation; he may transfer within a cluster from one job to another, and this hopefully would carry over into the real world where transferring between related jobs would be easier. From a school's standpoint, clustering allows more advantageous use of facilities, space, and personnel. Clustering encourages team teaching, allows for individual instruction, and is easier to develop into a curriculum.[5]

1.2 Definition of Adult Education

Adult education is an educational specialty in which there is keen interest today. Like vocational/technical education, adult education has received new attention, funding, and impetus during the last decade. Adult education refers to educational experiences designed for people 16 years of age and older who are not enrolled in school on a full-time basis. Adult education may be further subdivided into three categories.

1.2.1 Adult Basic Education

Adult Basic Education, as defined in the 1970 Amendments to the Adult Education Act of 1966, is designed for individuals 16 years of age and older, not currently enrolled in school, who either have a poor command of the English language, in both its spoken and written forms, to the extent that it prevents the individual from getting work commensurate with his innate abilities. Adult Basic Education programs provide instruction in basic academic skills through eighth-grade proficiency by improving the

Source: United States, Deparment of Health, Education, and Welfare, Office of Education, Career Education (Washington, D.C.: Government Printing Office: 1971), p. 12.

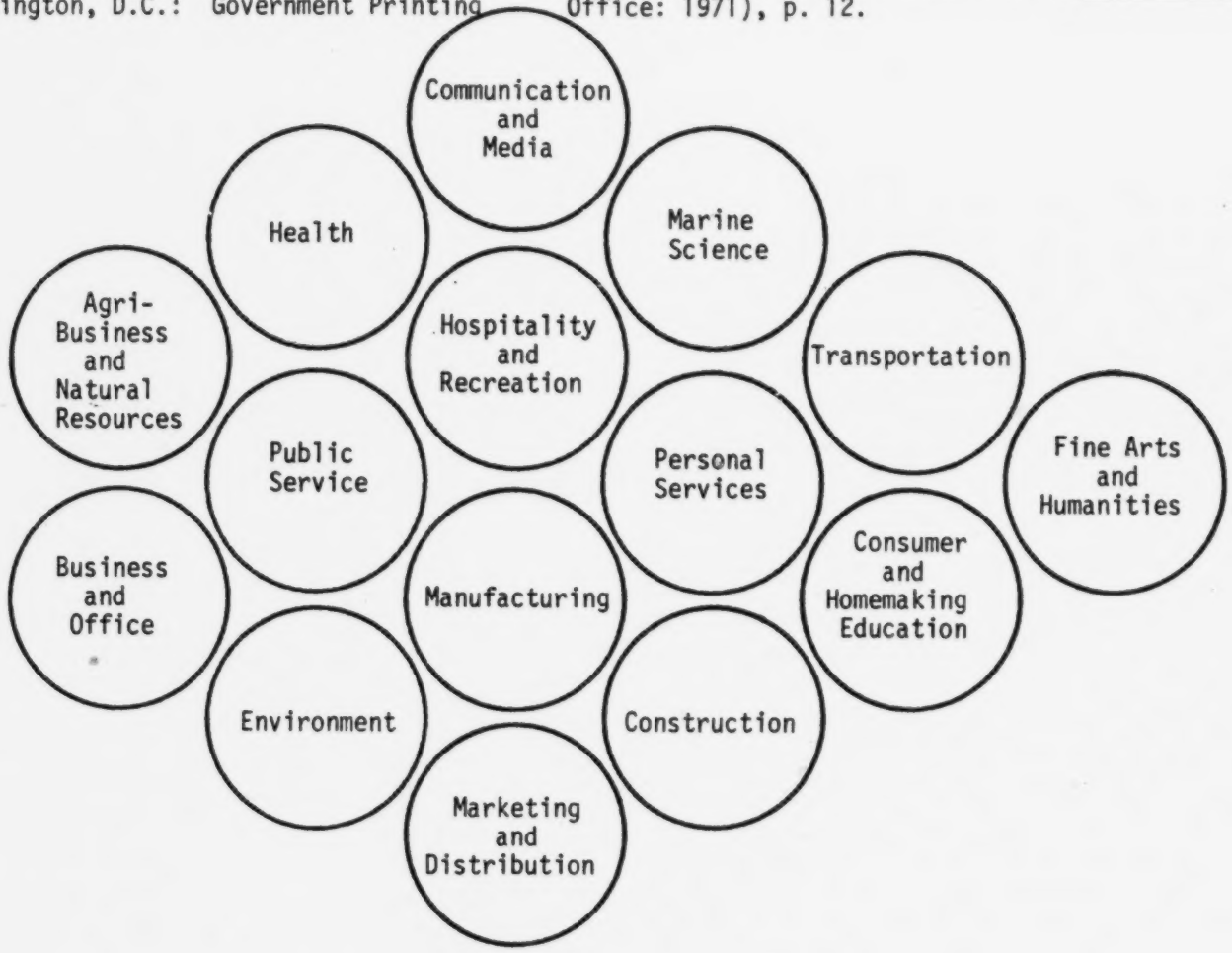


FIGURE 2

THE OFFICE OF EDUCATION'S 15 OCCUPATIONAL CLUSTERS

student's English language abilities, adult basic education endeavors to prepare him to take advantage of occupational training and placement opportunities.[6]

1.2.2 Adult Education

Adult Education, as defined in the 1970 Amendments to the Adult Education Act of 1966, is pre-college level services and instruction for individuals 16 years of age and over, not currently enrolled in school, and who have not completed secondary school or its equivalent.[7]

1.2.3 Adult/Continuing Education

Adult/Continuing Education refers to the broadest implications of instruction for an out-of-school population--the continuing nature of educational services or instruction. An individual may avail himself of a lecture series, course, or workshop based upon his interests, needs, or enjoyment. No credit or certificate of completion will be awarded for the effort, but engagement in educational activity of this nature will satisfy the specific needs of the student.[8]

Although adult/continuing education, as used within this context, does not imply school credit, the possibility of formal credit for educational activities of this nature should not be precluded. Credit may be optional, depending upon the nature of the activity and the initiative of the student.[9] Very few of the enrollees classified as adult/continuing education students convert their participation into credit.

Adult/continuing education is not, within the confines of this report, considered to be a part of the continuing education required of many professions. Graduate work in education or engineering, for example, are not within the confines of this term as used herein.

2. Vocational/Technical Education: Current Status

Vocational/technical education has widely-scattered target audiences; potential students may not be within the formal school structure but isolated from resident learning centers, disenchanted with formalized education, or home-bound for an assortment of reasons. Others may be students within the established educational system, and even these potential users may be dispersed among different levels. This section of the report will attempt to define who receives vocational education in three ways: 1) the vocational education student body within existing educational institutions at various levels, 2) the vocational education student body at sources outside established school systems, and 3) a demographic profile of the vocational education student body. The definition of users will be compiled in quantitative terms whenever possible.

In 1970, according to HEW statistics, there were 8,793,960 students enrolled in vocational/technical education programs at all instructional levels. The majority of the students, 5,114,451, were enrolled at the secondary level. 2,666,083 students were involved at the adult level. 1,013,426 students participated at the post-secondary level. Included within the total vocational/technical enrollment are the 920,603 students of "special needs;" 805,384 of whom are classified as "disadvantaged": the remaining 115,219 students as "handicapped."[10] These enrollment figures, compiled by the federal government from data supplied by the states, do not reflect the numbers of students in proprietary vocational schools. Estimates of proprietary school enrollment range from 35,000 such schools serving a student population of more than 5 million advanced by Clark and Sloan in 1964, to Belitsky's 1966 survey which estimated 7,000 institutions serving one and a half million students.[11] Enrollment in proprietary correspondence schools would swell these figures by anywhere from 2,935,000 to 5 million, as variously estimated during the mid-1960's.[12]

During FY 1970, a grand total of $1,841,846,345 was spent for vocational education. Of this amount, $300,045,568 (or 16.3%) was spent by the federal government, and $1,541,800,777 (or 83.7%) was spent by state and local governments.[13] The Division of Vocational and Technical Education of the United States Office of Education estimates that by 1975, a total of $4,000,000,000 will be expended on vocational/technical education. Projections are that the federal share will equal $667,000,000 (or 16.7%) while the state/local share equal $3,333,000,000 (or 83.3%).[14] Of the federal expenditures the lion's share, $265,811,962, was distributed according to the provisions of the Vocational Education Act of 1963 and the Amendments of 1968. Table 1 gives a breakdown of how this money was distributed among instructional levels. Both percentage share and total funding for post-secondary vocational/technical education rose between 1965-1970. By FY 1970, post-secondary vocational/technical education was receiving $61,291,196 in federal funds, or 23.1% of the federal monies

TABLE 1

EXPENDITURES FROM VOCATIONAL EDUCATION ACT OF 1963 FUNDS*, BY PURPOSE
FISCAL YEARS 1956-1970

	1965		1969		1970	
	Amount	Percent of Total	Amount	Percent of Total	Amount	Percent of Total
Total	$100,308,804	100.0	$227,527,428	100.0	$265,811,962	100.0
Secondary	32,398,818	32.3	70,602,561	29.3	60,964,268	23.0
Postsecondary	13,444,552	13.4	52,823,156	21.1	61,291,196	23.1
Adult	6,131,385	6.1	10,914,613	6.0	12,453,465	4.7
Special Needs	345,978	0.3	7,884,454	3.9	-	-
Disadvantaged	-	-	-	-	42,352,806 1/	15.9
Handicapped	-	-	-	-	21,407,829 2/	8.1
Construction	42,729,943	42.6	50,909,869	25.2	34,429,935	13.0
Ancillary	5,258,128	5.3	34,392,775	14.5	28,164,754	10.6
Guidance & Counseling	-	-	-	-	4,259,865 2/	1.6
Contracted Instruction					(1,208,798) 3/	(0.5)

* Includes Vocational Education Act of 1963, Section 3 funds in 1965 and 1969. Includes Vocational Education Act of 1963, as amended, Part B funds in 1970.
1/ Special needs expenditures reported separately for disadvantaged and handicapped starting in 1970.
2/ Included in ancillary services prior to 1970.
3/ First reported in 1970; memo amount expended by level.

Source: Trends in Vocational Education, p. 18.

distributed under the 1963 and 1968 legislation. In terms of the FY 1970 allotments under that legislation, post-secondary vocational/technical education drew the greatest total amount of federal funding and the largest percentage share. A Fact Sheet on the Federal Program of Vocational and Technical Education dated July, 1971, indicated that federal appropriations available for FY 1972 under the 1968 Amendments equaled $513,988,455, and estimated that $471,968,455 would actually be spent.[15]

Growth potential for vocational/technical education is considered good. Projected vocational/technical education enrollment at public institutions for 1975 is expected to equal 13,800,000 students, of whom 8,247,000 will be enrolled at the secondary level; 1,830,000 will be enrolled at the post-secondary level; 3,723,000 will be enrolled at the adult level; included in these estimates are students with "special needs" (the handicapped and the disadvantaged) who will equal 1,412,000 enrollees.[16] The outlook for private vocational schools also indicates growth. The Education Amendments passed by Congress in June, 1972, direct the states to establish/designate a state agency to coordinate all institutions of higher education (including proprietary vocational schools) within their boundaries as a means of implementing the maximum optimization of educational opportunities for their citizens.

2.1 Distinction Between Instruction Within Formal Educational Structures and Instruction Outside Formal Educational Structures

Formal educational structures, as used in this context, are those that conform to the prevailing American pattern of secondary and post-secondary schools where instruction is given to students in a classroom situation. The instructional level ranges from high school through college, but when speaking of vocational/technical education, the possibility of a bachelor's degree is not included. Such institutions may be publicly or privately controlled but are not operated for profit.

Institutions outside the formal educational structure, as used in this context, are proprietary in nature and operated for profit, offering either correspondence or classroom instruction. Such schools are a factor to be taken into consideration when examining vocational/technical education for, as previously mentioned, many vocational/technical education students receive instruction from these sources.

Two additional comments should be made when noting the distinction between institutions within and without the formal educational structure. 1. There are institutions of higher education within the formal educational structure which offer correspondence instruction. Hence, not every correspondence school operates exclusively to show a profit outside the formal educational structure. Correspondence schools conducted by institutions of higher education within the formal

educational structure are examined in section 2.6, "Correspondence Schools: Extension Divisions and Proprietary Schools." The creation of a special section for correspondence instruction was necessary so that the magnitude of the correspondence instruction market, and the shares of each participant, could be more easily assessed. 2. The June, 1972 passage of the Education Amendments by the United States Congress has laid the foundation for erasing the distinction between institutions within and without the formal educational structure. Implementation of the Education Amendments has yet to occur. Therefore, when assessing the current status of vocational/technical education it is helpful to maintain the distinction for purposes of analytic discussion.

2.2 Secondary Level Vocational/Technical Education

Generally, vocational education begins to be available at the secondary level. This refers to the school years between the completion of elementary school and the twelfth grade. Vocational instruction may take place at a comprehensive high school or at a vocational/technical high school. The former is a secondary level school with a number of departments offering a variety of programs to meet the needs of a diversified student body. A vocational/technical high school is a secondary level institution designed to meet the needs of a more homogeneous student body, namely those interested in instruction in the technical occupations.[17] A 1969 survey found that approximately 75% of secondary vocational education teachers are working in comprehensive schools.[18]*

Wherever vocational/technical education is taught, at whatever instructional level, the total vocational/technical program is likely to be divided into seven curricular categories. The categories are: Agriculture, Distribution, Health, Home Economics, Office, Technical, and Trades and Industry. (For individual descriptions, see Appendix.) These seven categories are the traditional divisions within vocational/technical education. The clustering approach, described earlier, represents an alternative structure for vocational/technical education design and implementation.

In 1970, there were 5,114,451 secondary students in vocational/technical education programs. In 1965, 11.9% of secondary vocational/technical education students were enrolled in gainful vocational education programs.** By 1970, the secondary gainful vocational

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*The survey was conducted by the National Center for Educational Statistics; the data lacked responses from Illinois, Indiana, and New York which prevented regional breakdown and could affect interpretation of metropolitan data vis a vis rural or smalltown data.

**Vocational/technical enrollment minus homemaking enrollment.

education enrollment had risen to 24.4% of the total vocational/technical enrollment. It is projected for 1975 that 40.9% of secondary vocational/technical education students will be so enrolled.[19] It is anticipated that by 1975, 54.6% of secondary school students will be receiving some form of vocational education (including homemaking); this will represent more than a 100% increase over a ten year period, since 24.2% of the same population was receiving vocational education during 1965.[20]

Secondary vocational education retained its enrollment leads over other levels of instruction in the traditional programs of Agriculture and Home Economics between 1966 and 1970, as shown in Table 2. Agriculture, including programs in off-farm agriculture, grew slowly although off-farm agriculture enrollments rose from approximately one-fifth to one-half of the total enrollment. Home Economics, including gainful home economics enrollment, grew steadily throughout the period although gainful home economics enrollments were still small in relation to the total enrollment. Secondary enrollment in Office Training programs topped those of any other instructional level. During the four-year period, secondary enrollments surpassed those of declining adult enrollments in Distributive Education.

Program enrollment within secondary vocational education is still concentrated, to a great extent, within the vocational curricular staples of agriculture and home economics. The enrollment rise within distributive education programs may reflect some innovation within secondary vocational education. Excepting distributive education and the retention of traditional business courses for office work (typing and shorthand), viable job training for those students interested in other fields, such as health occupations, is postponed until the post-secondary level. Heavy secondary enrollments in agriculture and home economics perhaps is attributable to these programs serving as an academic alternative rather than viable job training.

2.3 Post-Secondary Level Vocational/Technical Education

Occupational training after high school, or at the post-secondary level of instruction, has increased in availability with the growth of the Junior College. The increased prevalence of these institutions is perhaps due to their growth as a continuation of public school systems, thus giving rise to the term community college, although junior colleges may be privately controlled. A junior college is considered an institution of higher education which offers instructional options to its students; college transfer courses, general education courses at the appropriate instructional level, and vocational, technical, semiprofessional training are all available. Junior college instruction is of less than 4 years duration. These institutions do not grant baccalaureate degrees although they do award associate degrees or certificates of completion for occupational programs.[21]

Another choice for the post-secondary vocational student is the technical institute. This institution has been described as "an institution, or a division of an institution, offering instruction primarily in one or more of the technologies at the postsecondary level."[22]

Post-secondary vocational enrollment increased from 3.8% of the total vocational student body in 1965 to 11.5% in 1970. The 1970 enrollment of 1,013,426 represented an increase of 307,341 over 1969.[23] Projected enrollment for 1975 is estimated at 1,830,000 or 13.2% of all those receiving vocational instruction.[24] 2-year institutions awarded more certificates of completion for occupational programs than did 4-year institutions. Furthermore, the bulk of attendance for post-secondary occupational training is at publicly controlled institutions.[25]

The greatest concentrations of post-secondary vocational enrollment occurs in Health and Technical programs; indeed, it is this instructional level that leads all others in enrollment for those categories. Between 1966-1970, health program enrollments almost tripled as enrollment growth at the post-secondary level surpassed that at the adult level, as shown in Table 2. Post-secondary enrollment for technical programs overtook adult technical enrollments in 1970 due to a decline in adult enrollments for that year. This may be the result of a temporary fluctuation. However post-secondary technical enrollments did show steady gains throughout most of the four year period.

2.4 Adult Level Vocational/Technical Education

In spite of the numerical and percentage increases in post-secondary vocational education, adult vocational education continues to rank behind secondary vocational education in total numbers. In 1965, almost 2,400,000 adults were enrolled; by 1970, enrollment had fluctuated to almost 2,700,000. Projected enrollment by 1975 is estimated at 3,723,000; this will amount to a 3.3% decrease in the adult vocational enrollment share of the total vocational enrollment from 1970. Adult vocational education is the only one of the three instructional levels that did not show steady numerical growth between 1965-1970.[26]

Adult vocational enrollment has always led in Trades and Industry programs; an adult enrollment drop in Technical programs between 1969-1970 accounted for the post-secondary level's enrollment predominance in that area. Between the years 1966-1970, the adult instructional level lost enrollment predominance to the secondary level in Distributive Education. Adult vocational enrollment levels remain in strong second place in Health, Office, Agriculture, and Home Economics programs. With the exception of Agriculture and Home Economics,

TABLE 2

ENROLLMENT IN VOCATIONAL EDUCATION, BY LEVEL AND PROGRAM
FISCAL YEARS 1966-1970

Level and Type of Program	1966	1967	1968	1969	1970
All Programs	6,070,059	7,047,501	7,533,936	7,979,366	8,793,960
Secondary	3,048,248	3,532,823	3,842,896	4,079,395	5,114,451
Postsecondary	422,097	499,906	592,970	706,085	1,013,426
Adult	2,530,712	2,941,109	2,987,070	3,050,466	2,666,083
Special Needs	49,002	73,663	111,000	143,420	(805,384) 1/
(In Regular Programs)	(53,154)	(92,925)	(107,942)	(144,274)	(115,219) 2/
Agriculture 3/	907,354	935,170	851,158	850,705	852,983
Secondary	510,279	508,675	528,146	536,039	550,823
Postsecondary	5,987	8,093	11,036	15,816	23,381
Adult	390,388	413,454	305,357	290,336	278,779
Special Needs	700	4,948	6,619	8,514	(69,087) 1/
(In Regular Programs)		(12,488)	(14,691)	(27,215)	(10,046) 2/
Distribution	420,426	481,034	574,785	563,431	529,365
Secondary	101,728	151,378	175,816	184,206	230,007
Postsecondary	15,833	21,003	44,824	60,718	82,160
Adult	301,116	303,783	349,730	307,976	217,198
Special Needs	1,749	4,870	4,415	10,531	(47,272) 1/
(In Regular Programs)		(9,065)	(17,469)	(11,846)	(5,219) 2/
Health	83,677	115,109	140,987	175,101	198,044
Secondary	9,793	16,734	20,952	23,207	31,915
Postsecondary	36,496	54,135	64,592	91,922	102,515
Adult	37,065	42,721	52,865	56,603	63,614
Special Needs	323	1,519	2,578	3,369	(20,179) 1/
(In Regular Programs)		(1,146)	(1,529)	(4,243)	(2,951) 2/

Level and Type of Program	1966	1967	1968	1969	1970
Home Economics 4/	1,897,670	2,186,992	2,283,338	2,449,052	2,570,410
Secondary	1,280,254	1,475,235	1,558,004	1,670,347	1,934,059
Postsecondary	2,652	3,506	4,395	13,490	44,259
Adult	602,363	685,225	677,478	718,817	592,092
Special Needs	12,401	23,026	43,461	46,398	(235,000) 1/
(In Regular Programs)		(33,437)	(26,783)	(36,315)	(20,591) 2/
Office	1,238,043	1,572,335	1,735,997	1,835,124	2,111,160
Secondary	798,368	985,398	1,059,656	1,122,198	1,331,257
Postsecondary	165,439	192,639	225,182	218,448	331,001
Adult	271,149	389,194	443,481	482,160	448,902
Special Needs	3,087	5,104	7,678	12,318	(197,359) 1/
(In Regular Programs)		(18,475)	(28,540)	(35,517)	(18,720) 2/
Technical	253,838	266,054	269,832	315,311	271,730
Secondary	28,865	27,614	36,286	31,833	34,386
Postsecondary	100,151	97,156	104,746	130,564	151,621
Adult	124,730	140,431	127,418	151,714	85,723
Special Needs	92	853	1,382	1,200	(13,373) 1/
(In Regular Programs)		(2,927)	(568)	(3,301)	(2,555) 2/
Trades and Industry	1,269,051	1,490,807	1,628,542	1,720,859	1,906,133
Secondary	318,961	367,789	421,719	458,554	692,396
Postsecondary	115,539	123,374	137,732	174,201	261,182
Adult	803,901	966,301	1,030,723	1,042,362	952,555
Special Needs	30,650	33,343	38,368	45,742	(182,642) 1/
(In Regular Programs)		(15,387)	(17,527)	(22,148)	(30,155) 2/
Other			49,297	69,783	354,135 5/
Secondary			42,317	53,011	309,608
Postsecondary			463	926	17,307
Adult			18	498	27,220
Special Needs			6,499	15,348	(42,472) 1/
(In Regular Programs)			(835)	(3,689)	(18,982) 2/

1/ Disadvantaged persons, included by level.
2/ Handicapped persons, included by level.
3/ Includes enrollments in off-farm agriculture as follows: 1966 - 112,368; 1967 - 151,781; 1968 - 171,554; 1969 - 205,846; 1970 - 268,226.

4/ Includes enrollments in gainful home economics as follows: 1966 - 41,846; 1967 - 62,245; 1968 - 73,048; 1969 - 113,297; 1970 - 151,194.

5/ Includes enrollments in exemplary, prevocational, prepostsecondary, and remedial programs.

Source: Trends in Vocational Education, Bureau of Adult, Vocational, and Technical Education, Office of Education, Department of Health, Education, and Welfare, Washington, D.C. (June, 1971), pp. 10,11.

the concentration of adult vocational enrollment would seem to be in areas of specialized job skills, the kind of training one needs for entry into the labor market or to retain one's job or win promotion.

2.5 Conclusions on Instruction within Formal Educational Structures

The most notable occurrence in recent years has been the growth of two year post-secondary education. An attraction of such institutions is that they offer occupational training to their students. Indeed, the enrollment growth of post-secondary vocational education has been enough to make that instructional level register the sharpest percentage increase between 1965-1970. The post-secondary surge occurred while the total vocational student body, at all instructional levels, grew.

Preliminary figures for FY 1970 (the most recent available) indicate a 10.2% increase in total vocational/technical education enrollment over the previous year.[27] Trends may be spotted and projected as follows: the majority of vocational/technical education students are at the secondary level (58.2% in 1970), but the percentage of students at the post-secondary level has steadily increased (from 3.8% of total vocational/technical education students in 1965 to 11.5% in 1970). Adult enrollment represents a declining percentage; a drop to 30.3% of the total vocational/technical student body in 1970 and a projected decline to 27% in 1975.[28]

Within that context, it is illuminating to look at enrollment preferences for one type of vocational instruction over another. The resulting picture is one of realignment and change within vocational education; new programs are being developed while more students are being served. The traditional goliaths of vocational education enrollment, Agriculture and Homemaking, have continued to enroll more students although their percentage of the total vocational enrollment figures have declined. The declining relative importance of these programs has been accompanied by the increasing importance of the Health, Technical, and Trades and Industry fields. In fact, "From 1960 the greatest rate of increase occurred in Health, Technical, and Trades and Industry all exceeding the growth rate in total enrollment."[29] Within each of those three categories, the newer specialties attract enrollment, sometimes at the expense of the established specialties.* Whether the latter phenomenon reflects a

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*Examples within each field mentioned may be cited: 1) Health Occupations: recent specialties such as inhalation therapy technician and medical laboratory assistant have flourished without diminishing the attraction of practical nursing; 2) Technical Occupations: newer fields such as automotive technology and police science have boomed while established field such as electronics and mechanical technology have declined in popularity; 3) Trades and Industry: newer occupations such as blueprint reading and Quantity Food Occupations have registered enrollment growth while the more-traditional Graphic Arts, Commercial Art, and Construction and Maintenance have remained unaffected.

close fit between vocational education graduates and the labor market will be examined later in this study.

2.6 Correspondence Schools: Extension Divisions and Proprietary Schools

Those students receiving instruction at home are most likely to be correspondence school students. Correspondence schools may be either extension services of colleges and universities or privately-owned-and-operated for a profit. However, a variety of institutions have employed the correspondence technique; the military, private business and industry, agencies within the federal government, and--to a lesser extent--labor unions.[30]

Due to the tenuous nature of some of the estimates regarding the student body of correspondence education, the total enrollment figures are open to some conjecture. The Correspondence Education Research Project estimated that there were 2,935,000 correspondence students during 1965 when there were 5,700,000 students enrolled in resident institutions of higher education.[31] However, based upon a 1966 survey of private proprietary schools, A Harvey Belitsky arrived at a figure of 5,000,000 for the correspondence-school student body. Belitsky's figure adds enrollments from accredited, non-accredited, and military correspondence schools; the total surpasses total enrollment in private (classroom) vocational schools.[32] However tentative the figure for correspondence enrollment may be, it does demonstrate that a sizable number of people utilize correspondence instruction.

The three biggest suppliers of the home-study market are the military, proprietary correspondence schools, and extension divisions of institutions of higher education. A 1965 survey conducted by the Correspondence Education Research Project, based upon figures furnished by institutional suppliers, awarded 60.2% of the home-study market to the military for their correspondence training courses, a 22.4% share to proprietary correspondence schools, an 8.2% share to extension divisions of colleges and universities, with the remainder of the home-study market divided among various suppliers as shown in Table 3.[34] The U.S. Armed Forces Institute (USAFI) was listed separately from the armed forces, apparently because USAFI is described as offering "...educational courses...for the benefit of the military personnel."[34]

The Fall, 1970, total enrollment at institutions of higher education was 8,649,368. Of this enrollment, 405,077 students were engaged in non-resident extension instruction. 7.2% of the total extension enrollment, or 28,988 students, were taking vocational education courses that were not creditable towards a baccalaureate degree. Although total extension enrollment increased by 4.8% between 1969-1970, vocational education extension enrollment decreased by 23% during the same time. In 1969, 9.7% of the total extension

TABLE 3

ESTIMATED CORRESPONDENCE STUDY STUDENT BODY AND ENROLLMENTS BY INSTITUTIONAL SUPPLIERS FOR 1965

Institutional Supplier	Active Enrollments At Any One Time	1965 Enrollments	Percent Of Enrollment
Armed Forces	1,301,000	1,767,400	60.2
USAFI	123,900	116,700	4.0
Federal Government	23,200	28,200	1.0
Private Home Study Schools	No Estimate	656,500*	22.4
Universities and Colleges	193,600	242,000+	8.2
Religious Organizations	47,000	59,000	2.0
Business and Industry	38,500	45,300	1.5
Associations	12,300	14,900	0.5
Labor Unions	5,000	5,000	0.2
		2,935,000	100.0

*NHSC 1965 estimate (664,155) for accredited and nonaccredited schools less estimated enrollments (7,650) by four association members which are included in association figure.

+Includes National University Extension Association-Association of University Evening Colleges, state governments, and non-NUEA suppliers.

Source: Enrollment figures based upon estimates given by institutional suppliers in response to CERP surveys and interviews. Since CERP's estimate for 1965, enrollments have increased. For example, NHSC reported private home study school enrollments in 1966 of 669,130 compared to 664,155 in 1965; USAFI reported enrollments in 1966 of 131,770 compared to 116,700 in 1965.

(Source: MacKenzie, O. et. al. Correspondence Instruction In the United States. New York: McGraw-Hill Book Company, 1968, p. 8.)

enrollment, or 37,671 students, were engaged in vocational instruction by extension.[35]

The national organization for extension services is the Division of Correspondence Study of the National University Extension Association (NUEA). The NUEA is not an accrediting organization, since accreditation for extension services is basically granted when the parent school is accredited.[36] To the extent that the NUEA fosters cooperation, interchange, and exchangability among its members, it may serve as an important contributor to the formation of a national or regional market for educational activities via extension services. As of 1968, the NUEA held an annual convention for its 64 members and published, as more tangible signs of membership cooperation, the 1962 volume Criteria and Standards and A Guide to Correspondence Study in Colleges and Universities listing available extension correspondence offerings.[37]

Examples of colleges and universities extending themselves via electronic media are becoming more commonplace; the idea is not new.* Inclusion of vocational education curricula within these programs is rarer.

Correspondence schools not under the aegis of a resident college or university or the military are most likely to be proprietary schools. The National Home Study Council (NHSC) is the prominent organization for this group; however, not every privately-owned correspondence school is a member of the NHSC. Chief among the NHSC's duties is to accredit private home study schools. The Correspondence Education Research Project noted that "the NHSC is the only recognized group set up specifically to perform an accrediting function for correspondence instruction programs."[38] Indeed, the list of United States Office of Education recognized accrediting agencies includes the NHSC as of April, 1970.[39]

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*Perhaps the most-recent entrant into the extended university field is the State University of Nebraska operating out of the University of Nebraska. The SUN project aims to be distinctive "...in that it will rely substantially on electronics to communicate with the non-resident student." Media used will be the statewide ETV network, videotapes, cassettes, telephone, and accompanying print and lab materials; utilization of some features will take place at resource centers scattered throughout the state to put all participants within driving distance. Centers will be staffed by qualified personnel. Coursework offered will be academic in nature; plans may expand to include offering associate degrees, although at this juncture a high school diploma is not required for participation. It is estimated that the study body will range between 14,000 and 24,000 plus 2000 participating high school students. Production of each course will cost between $40,000-$50,000; cost to the student is estimated at $18 per credit, with the average course carrying 3 credits. Cost is figured on the basis of continued federal support.

In the report of the Correspondence Education Research Project, the chapter entitled "The Task for the Future"* is devoted in part to outlining the compatibility of correspondence instruction with various forms of audio-visual media. However, recent examples are not cited. The authors note two trends of interest: 1) more cooperation among suppliers, hopefully resulting in less needless fragmentation of the market and more broadly-based quality coverage, and 2) the existence of a segment of private industry which has the resources to combine media and produce better correspondence instruction. Within the context of the last point the authors cite educational publishing firms and communication companies (Bell & Howell, Westinghouse, Ampex, Sony, Kodak, IBM, and G.E.) as expanding their hardware and software resources for the eventuality of greater media mix in non-resident instruction.[40]

There are difficulties inherent in the correspondence method. Waning student motivation, inadequate guidance and counseling, and the unsuitability of some fields for correspondence instruction are some of the more-apparent flaws in the correspondence technique.[41] All of these disadvantages may be contributors to non-completions in correspondence instruction. Non-completions may be one of two types: 1) non-starts, or those students who sign-up and never start the course, or 2) drop-outs, or those students who begin but never complete the course.[42] Approximate percentages of non-starts indicate that private home-study schools, extension services, and the military register a higher maximum of 30% than do federal agencies, state governments, and business and industry with a maximum of 20%.[43] Drop-out statistics are more elusive.** However, approximate percentages of drop-outs indicate a maximum of 90% reported within business and industry, 70% reported by some private suppliers, and 27% reported by university extension services.[44]

A recent survey by the General Accounting Office for the Veteran's Administration confirmed a high drop-out rate among returning servicemen taking correspondence instruction under the GI Bill, particularly in the vocational-technical area. Based upon a random sample of such veterans, the GAO estimated that 75% failed to complete their courses with the drop-out rate rising to 90% in some instances.[45] As Table 4 shows, six subjects of the twenty most-frequently taken by corresponding veterans posted non-completion rates of 90% or more. Of these six, three would be classified in the vocational-technical area (Drafting, Electronic Technician Training, and Electronic Operation).

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*MacKenzie, et al, Correspondence Instruction in the United States.

**The authors of the Correspondence Education Research Project caution that the definition of a completion may vary from school to school, some regarding it as passing a final examination, others regarding it as the completed return of all lessons in the course. Other variations on this theme may be cited.

TABLE 4

COMPLETION RATES OF VETERANS ENROLLED IN CORRESPONDENCE COURSES

Subject	Did Complete		Did Not Complete	
	Number	Percent	Number	Percent
Commercial art	200	4	4,800	96
Accounting	800	7	10,700	93
Drafting	500	7	6,800	93
Electronic technician training	2,500	9	25,400	91
Electronic operation	300	9	2,900	91
Secondary courses, high school completion and college preparation	700	10	6,000	90
Engineering technician training	2,200	12	15,500	88
Performing arts	600	15	3,400	85
Radio and television broadcasting	800	21	3,000	79
Computer technician training (below college level)	1,900	22	6,800	78
Electronic mechanic and repairman training	3,500	24	10,800	76
Auto mechanics and repair	1,000	26	2,800	74
Other business and commerce	2,300	27	6,300	73
Electrical trades	2,600	30	6,100	70
Air conditioning and refrigeration	1,500	31	3,400	69
Mechanical courses	1,400	37	2,400	63
Protective services	1,700	44	2,200	56
Salesmanship	2,300	56	1,800	44
Real estate and insurance	12,500	64	7,000	36
Hotel and motel training	2,900	64	1,600	36
Total	42,200	25	129,700	75

We asked those veterans who did not complete their correspondence courses whether their course selection would have been different if they had known of the rates of completion for the courses. The veterans were given a choice of four answers and their responses were as shown.

Source: "Most Veterans Not Completing Correspondence Courses - More Guidance Needed from the Veterans Administration", Report to Congress by the Comptroller General of the United States, Washington, D.C. (March 22, 1972) in ERIC ED 061 514.

Most of the subjects listed in Table 4 fall into the vocational-technical category. One of the survey's findings was that "Most of the veterans had enrolled in correspondence courses to learn new skills or to improve existing skills to obtain better jobs or to earn more money."[46] One of the conclusions of the GAO survey was that the Veteran's Administration should augment its counseling service in an attempt to fill the counseling gap evidenced by the high non-completion rate. The survey suggested that the VA make up-dated information readily available to its counseling staff regarding the relevance of correspondence offerings for the individual in terms of his occupational plans and aptitude, and the completion rate of veterans in the various subject offerings.[47]

2.7 Proprietary Vocational/Technical Schools

The term "classroom proprietary schools" is used, in this context, to distinguish those private vocational schools offering occupational training at a centralized location with students in attendance from those schools offering vocational training via correspondence. A 1966 survey revealed 7,000 such schools serving a student population of 1.5 million.* These figures are conservative when compared with the pioneering market estimate for private vocational schools conducted by Clark and Sloan in 1964; Clark and Sloan estimated an excess of 35,000 private vocational education institutions serving a student population in excess of 5 million.[48]

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*The findings of this survey are reported in "Private Vocational Schools: Their Emerging Role in Post-secondary Education," an article by A. Harvey Belitsky appearing in Trends in Post-Secondary Education. Belitsky's findings are drawn from a questionnaire answered by 1,200 schools and additional information supplied by associations representing each type of proprietary vocational institution as follows: 1) representative of barber colleges, 2) representative of cosmetology schools, 3) The United Business Schools Association (UBSA) representative of business schools, and 4) the National Association of Trade and Technical Schools (NATTS) representative of trade and technical schools. Reliability of the association-supplied information may be gauged from the following: 1) the barber and cosmetology schools conduct an annual census which yields exact information, 2) the UBSA had 500 members and knew of an additional 800 non-member institutions, and 3) NATTS, formed the year prior to the survey (1965) had 200 members while maintaining a mailing list "...several times that number."

Generally, private vocational schools may fall into one of four categories: 1) Trade and Technical Schools, 2) Business Schools, 3) Barber Colleges, and 4) Cosmetology Schools.* Findings of Belitsky's 1966 survey indicated that private vocational enrollment was heavily concentrated in Trade and Technical schools and Business schools, which together accounted for 80% of the enrollment. (See Table 5) Enrollments at individual schools tended to be small, with less than 5% of the sampled schools reporting enrollment of more than 2,000 students per year. Greatest per-school enrollments tended to be in Business schools, although these institutions reported less than 350 students per year. This was 20% more than average Trade and Technical school enrollments, and in excess of barber and cosmetology school enrollments.[49]

Private vocational schools usually operate on a calendar-year schedule to afford the maximum in efficiency and flexibility for the student. Four new classes per year are offered, and students may enter after classes have begun. Evening classes are offered. Students may attend on either a full-time or part-time basis. Part-time attendance would normally mean taking twice as long to complete the course. Belitsky notes that the median course length for trade and technical schools was 40 weeks.[50]

In addition to giving the student scheduling latitude, private vocational schools encompass a wide range in their admissions policies. Their ability and willingness to deal with students with educational disadvantages and physical handicaps may be roughly surmised. The student lacking a high school diploma is not a rarity. Belitsky reports that "A substantial percentage" of private vocational schools accept such students. Compensatory coursework is offered; a minimum of 10% of the business schools offer at least one course of study not requiring high school completion, while around 40% of the trade and technical schools do likewise. Less than 10% of the barber and cosmetology schools require high school completion, while around 40% of the trade and technical schools do likewise.[51] The high school drop-out learning a marketable skill, the college graduate picking up a needed course unavailable elsewhere, members of the labor force training for new occupations, or anyone studying for a licensable occupation all are accommodated in private vocational schools.[52]

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*Perhaps this categorization is too constricting. As of April, 1970, the United States Office of Education recognized the Accrediting Bureau for Medical Laboratory Schools as a Professional Accrediting Agency. This might indicate another type of private vocational school, namely those training paraprofessional specialties for the medical field.

TABLE 5

PROPRIETARY VOCATIONAL SCHOOLS BY TYPE (1966)

Occupational Category	Number Of Schools	Percent Of Schools	Number Of Students	Percent Of Students
Trade and Technical	3,000	42.4%	835,710	53.4%
Business	1,300	18.4	439,500	28.1
Cosmetology	2,477	35.0	272,470	17.4
Barber	294	4.2	15,876	1.0
	7,071	100.0%	1,563,556	99.9%

(Source: Belitsky, A. Harvey, "Private Vocational Schools: Their Emerging Role In Postsecondary Education", in Trends in Post-Secondary Education, Office Of Education, Department of Health, Education, and Welfare, Washington, D.C. (1970), p. 252.

Prior to the Education Amendments of 1972, federal education legislation stipulated that grants and subsidies must go to public and/or non-profit institutions. Students received aid under a variety of federal programs or through training programs that are conducted under contract. (See listing, Appendix) Such funds, apparently, may be applied at whatever educational institution meets the student's needs. Three of the 15 federal student aid programs are for specific ethnic constituencies (Cuban refugees, Indians, and Eskimos; the last two aid programs are specifically for vocational education); one of the 9 federal contract training programs is for a specific ethnic constituency (adult Indian vocational education). Many of the federal student aid and training programs serve political constituencies; notable among training programs are the Manpower Development and Training Act of 1962, the Economic Opportunity Act of 1964, and Social Security Title II, Public Welfare Work Training Programs (AFDC). The federal government also funds training programs under the Vocational Rehabilitation Act and Veterans' Vocational Rehabilitation, presumably to aid handicapped persons.[53] However, federal funds may be the ones enabling attendance at expensive private vocational schools by those groups who would presumably be least able to attend. Belitsky notes this situation: "It is not known to what extent black and disadvantaged members of other minorities have been enrolled in the private schools. Probably most of the blacks enjoying such opportunities receive financial aid under programs of the Veterans Administration Vocational Rehabilitation agencies, the Manpower Development and Training Act, and other government agencies."[54]

Private vocational schools do not lose sight of their mission--to train students for employment in a given field. To accomplish this, training is long on practice and short on theory. There is an element of classroom instruction in the traditional manner, but emphasis is on practice in work-simulated environments, with reliance on visual aids rather than textbooks.[55] The student is not "bothered"* with non-related liberal arts courses, although there may be light homework assignments.

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*Interviews of students in private vocatinal schools by the House Republican Task Force on Education and Training and the Stanford Research Institute indicated that one reason students preferred private vocational schools to community colleges was the absence of non-vocational subjects ("...often the very subjects in which students were unsuccessful in high school.") Report of Repub. Task Force in Peck, ED 056 307.

2.7.1 Concentration of Ownership of Proprietary Vocational/Technical Schools

Ownership of both residential vocational schools and private home-study schools is concentrated, usually within the ranks of large corporations. The individual schools may either be part of a chain owned by a large corporation, or a franchise operation. Expansion of both options, chains and franchises, is contemplated. A 1970 Oregon Educational Coordinating Council Staff Report quotes a previous count showing 11 corporations to own 67 proprietary schools. An appendix to the Oregon Report notes that in 1962, 66% of the private vocational schools were corporations.[56] Many of the large corporations assuming ownership of vocational schools have business experience in other media; G.E. (Cleveland), Michigan Bell Telephone, Philco-Ford, ITT, Westinghouse Learning Corporation,[57] and CBS[58] are all examples. Current indications are that these concerns purchased private vocational schools for investment diversification purposes, rather than as corporate recruitment and training pools.[59]*

Although the private correspondence school market may afford easy entry, competition is apparently severe and ownership tends toward concentration and the reservoir of financial resources this implies. The Correspondence Education Research Project, based upon an NHSC membership figure of 77, reported that control of member schools rested with 59 organizations, four schools issued publicly-traded stocks, one school was owned by a partnership, and one school was the property of a single owner.[60] LaSalle Extension University, a correspondence institution, is a division of the publishing firm of Crowell Collier and Macmillan, Inc.; LaSalle is part of the firm's Continuing Education Group which also includes the Berlitz language schools.[61] Regarding private correspondence school ownership, the pattern seems to be the same; many small operations continue to exist in the same market where ownership patterns are beginning to coalesce.

Concentration of ownership of private home-study and vocational schools within larger corporate bodies is a trend. Some of the new

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*Belitsky would apparently take issue with this. He feels that one attraction a proprietary school might have for a corporation is its ability to train employees on an "in-house" basis. This motivation for corporate take-over would encourage growth of the schools, independent of market forces. (Belitsky, p. 257)

owners have previous business experience in either education, other media, or both fields.* Concentrated ownership plus related business experience may be one of the necessary prerequisites for a more-truly national private vocational school market. A national market, or at least a less fragmentized one, would be a building block towards a feasible wide-scale distribution system.

2.8 Profile of Vocational/Technical Education Students

2.8.1 Location of Students and Institutions

Efforts to bring vocational education to all are not as imbalanced in favor or urban concentrations over rural population sparseness as might casually be assumed. The distinction occurs in the level of vocational education most utilized in each setting. Urban areas have greater enrollments at the post-secondary and adult levels; the cities lag in enrollments of students with special needs. It would also appear that large-scale media use to distribute vocational/technical education over meagerly-settled rural areas is not a common practice. Occupational placement information covering broad geographic areas might well be considered by systems designers a useful service that could be provided by large-scale electronic technology. Utilization in this fashion may be of considerable aid to the rural youth population in their urban mobility, assuming, of course, that present population trends continue.

Table 6 indicates spending for vocational education by location for FY 1970. Although, as noted in the footnotes, no data was available for compilation from some major population centers, total spending as recorded was not seriously skewered in favor of urban areas over rural areas (SMSA and Central City classifications vs. Non-SMSA classification). Spending in Economically Depressed Areas also failed to register a serious imbalance in favor of urban over rural areas. A study of vocational education expenditures for FY 1970 in cities found that, generally, enrollment in urban vocational education programs was less than the cities' percentage of the population while spending for vocational education by federal, state, and local governments was less in the cities than the cities' percentage of the population. Refinements in the urban enrollment picture are that the cities have greater enrollments in post-secondary and adult vocational education than in secondary vocational education. The cities also lag in enrollment of the handicapped and the disadvantaged. Here

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*There remain other firms in the private sector with the resources to create and implement a new educational media mix.

TABLE 6

TOTAL EXPENDITURES FOR VOCATIONAL EDUCATION BY OBJECT (EXCLUDES CONSTRUCTION AND WORK-STUDY)
FISCAL YEAR 1970
(IN 000'S)

Program	Total	Instructional Salaries	Instructional Equip.	Other Instruc. Costs	Guid. & Counseling	Admin., Super., Eval.	Teacher Educ.	Research & Demo.	Curriculum Dev.
Grand Total	$1,654,603	$1,006,777	$202,065	$235,100	$57,299	$112,924	$33,095	$4,411	$2,932
Part A 102(b) Spec. Disadv.	9,325	3,622	2,624	2,535	67	339	25	0	113
Part B 102(a) State Programs	1,461,480	868,578	181,188	217,274	55,178	105,337	28,799	2,911	2,215
Part C Research	1,372	139	6	0	0	473	59	689	6
Part D Exemplary	4,776	2,027	604	952	259	331	122	379	102
Part F Consumer & Homemkg.	165,280	124,272	16,567	12,553	1,580	5,747	3,813	401	347
Part G Cooperative	12,370	8,139	1,076	1,786	215	697	277	31	149

TOTAL VOCATIONAL EDUCATION EXPENDITURES BY LOCATION
FISCAL YEAR 1970
(IN 000'S)

Location	Total 1/	Federal	State/Local	Economically Depressed Areas Total 2/	Federal	State/Local
Grand Total	$1,297,542	$245,825	$1,051,717	$267,793	$50,838	$216,935
SMSA	535,421	92,804	442,617	117,215	20,059	97,156
Central City	286,025	46,566	239,459	95,453	14,232	81,221
Non-SMSA	668,936	136,346	532,590	132,307	28,879	103,428

1/ No report-California, District of Columbia, New York, North Carolina, Ohio, and Vermont
2/ No report-California, Delaware, District of Columbia, Florida, Minnesota, New York, North Carolina, and Ohio

Source: "Summary Data Vocational Education Fiscal Year 1970", Bureau of Adult, Vocational, and Technical Education, Office of Education, Department of Health, Education, and Welfare, Washington, D.C. (March, 1971), Mimeo.

again, no reporting occurred in some large population areas.* However, one may draw tentative conclusions based on the available data.[62]

Two other citations are in order. Belitsky noted that proprietary vocational schools tended to be located in either major metropolitan areas or in cities with less than 100,000 population.[63] The option of a private vocational school would not appear relevant for non-urban students. The option of post-secondary vocational education seems little used as indicated by the declining percentage of university extension students in occupational programs (p. 11, although these statistics do not account for vocational enrollment by private correspondence school). Future trends would seem to foreshadow the possibility of more resident learning centers in outlying areas. The Education Amendments of 1972 instructed the states to survey their domains to find areas inadequately served by accessible community colleges, and to rectify such situations by establishment of community colleges. Federal funding help was authorized for determination of needs, and establishment or expansion of institutions.[64] It may be hypothesized that young, small-town high school graduates gravitate to the urban centers where they seek work or the occupational training unavailable to them at home. This population shift may be reflected in the higher proportion of urban enrollment in post-secondary programs.

An imbalance does occur in the number of vocational education teachers available in each setting; the 1970 urban survey found that the cities have more vocational education teachers than their percentage of the population.[65] The teacher imbalance would seem to make it especially incumbent upon rural school districts to use their vocational personnel wisely. A revue of research into vocational education's attempts at reaching the rural disadvantaged made no mention of large-scale technological (i.e., audio-visual media) attempts to reach its target audience. Mention was made of mobile training facilities, mostly used for counseling.[66]

Outlying school district consolidation or cooperation may be the pivotal factor when considering the availability of vocational education in rural areas. Outfitting individual schools with vocational education equipment may be prohibitively expensive and rendered useless by a short supply of qualified instructors. Utilizing available manpower and equipment on a wider-scale, whether through consolidation, cooperation, or regional consortia may be helpful. The Appalachian Educational Laboratory has developed VIEW, a microfilm-based information system to aid students throughout Appalachia in career decisions.[67]

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*15 of the biggest cities in the following states were not reported: Arizona, California, Maryland, New York, and Florida.

Examples may be cited of vocational/career education availability to a rural audience (see section 4), but the central question of economic viability is still ignored. What is the ultimate cost to train or orient vocational education students in areas where there is limited economic activity? Vocational education cannot operate in a vacuum; although the needs of individual students must be taken into account, training must be responsive to the economic environment of the surrounding area. Therefore, when analysing the availability of vocational education in rural areas, a prime consideration is the presence or absence of regional job banks or employment data centers. Dissemination of employment opportunities, anticipated and current, and information regarding the skills required for such opportunities, would appear ideally suited to wide-scale technological delivery. Although examples are scarce, utilizing technology to distribute employment information would accord recognition to the fact that a portion of the rural population is, or will be, mobile. Aiding students in realistic preparation for future mobility would seem of demonstrable significance.*

Therefore, vocational education in rural areas has three dimensions: 1) some form of cooperation among rural districts to pool available resources, 2) utilization of large-scale delivery systems to disseminate instruction and orientation (already underway to some extent), and 3) development of information of employment opportunities in anticipation of future mobility.

2.8.2 Demographics of Students

The demographic data presents a picture difficult to capsulize. Vocational/technical education students are workers, preferably in areas they are studying. They apparently have family responsibilities, whether or not they head their own household, and do not see their vocational education as terminal until they approach graduation. Vocational/technical education students would seem to be a job-oriented group. Minorities would seem to be over-represented in vocational enrollments, although paucity of the data prevented any conclusive breakdown regarding regional or urban residence. Enrollment patterns with regard to sex emerge not only in terms of program choice, but also in terms of educational level.

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*See Vocational Education Planning, Manpower Priorities and Dollars (HE 5.2:V85/17), pp. 55-60. This selection notes the debate regarding local vs. broader planning for vocational education, but does mention the rationale for economically-retarded areas to plan in terms of outward migration of vocational education graduates. (p. 57.)

The report's underscoring of this point is not made at the exclusion of current attempts in this direction, such as those mentioned in the report or the possible expansion of the CVIS system currently in operation in DuPage County, Illinois (Computerized Vocational Information System, pamphlet).

Generally, more women than men are enrolled at the secondary level, a situation which reverses itself at the post-secondary level. Adult vocational education attracts an almost-evenly-divided enrollment by sex, although the percentage is slightly in favor of men.[68] Enrollment by program choice throughout the 1960's indicates that some fields are traditionally dominated by one sex; agriculture, technical, and trades and industry attract overwhelmingly male students, while home economics, health, and office studies have mostly female enrollments. In one field only, that of distribution, is enrollment fairly-evenly divided (with 11% more males).[69]

A national survey conducted in 1969 which followed up vocational education graduates of 1966 found that each level of instruction attracted a different clientele. Using the student's fathers level of education as an index, the survey found that junior college alumni had fathers with the highest levels of education, followed by other post-secondary alumni, and then by high school alumni.[70] A 1969 survey conducted to compile a profile of vocational education participants found that students generally came from families with an income in excess of $6,000 per year, regardless of where they lived (urban, suburban, or rural). The survey also found that approximately one-half of the vocational student body, at whatever level, worked at least part time. Furthermore, the proportion of working students increased as the reported family income level increased, leading to the inference that working students may well be contributing to the family kitty.[71] Of working students at all levels, over one-half held jobs related to their vocational program; of these, two out of five developed through cooperative education programs while the remaining 3/5ths either predated the student's vocational studies or were arranged through other sources.[72]

Minority group representation in vocational education is difficult to assess. The national survey conducted to compile a profile of vocational education participants in 1969 gave these indications of minority group representation in vocational education programs of educational institutions: about 20% of the vocational education students were minority group members, breaking down as: 14% Negro, 3.7% Chicanos, 2.6% American Indian, and 0.5% Oriental. Negro enrollment tends to be concentrated in various programs, i.e., 18% of the Negro enrollment is in "Trades and Industry" while "Health Occupations" enrollments are greater than 23% Negro. The 1969 data did not include reports from New York, Indiana, or Illinois, which prevented a regional breakdown and could affect the figures of minority groups reported.[73] The survey noted that the 20% participation rate in vocational education was higher than minority representation in the general population between ages 14-24 (which was 13.2%) and also higher than the percentage of minority members enrolled in school (12.5%).[74]

A final feature of vocational education students: how many see vocational education as terminal? The national follow-up survey on

1966 graduates noted that approximately one-half of the high school vocational education alumni continued their education, while the percentage increased somewhat for junior college vocational education grads. The conclusion was that post-secondary vocational education would seem to be terminal.[75] The 1969 survey on current vocational education participants confirmed this finding for secondary level graduates.[76] The 1969 NCES survey also noted that the more removed the student was from graduation, the more likely he was to be planning continuation of his education.[77]

3. Vocational/Technical Education: Issues

The size and structure of the vocational/technical education market having been examined, chapter three of this memorandum will focus upon the issues that are currently affecting this sector of the education market.

3.1 Renewed Interest in Vocational/Technical Education

Vocational-technical education is an idea whose time has come--again. Federal aid for vocational education has been available for a number of years, but under conditions constricting disbursal. It has only been within the past decade that vocational education has expanded its service potential, in terms of numbers, facilities, and philosophy. The impetus behind expansion was new legislation, but the legislation was drawn up in response to the mid-century realities of the labor market--decreasing openings for unskilled labor and the twin spectres of unemployment and underemployment. The Vocational Education Act of 1963 (Public Law 88-210) liberalized the operating philosophy of vocational education to meet the needs of individual students.[78] The Vocational Education Amendments of 1968 (Public Law 90-576) furthered this trend by instructing the states that fully 25% of federal funds received for vocational education must be spent upon the disadvantaged and the handicapped, at the rate of 15% on the disadvantaged and 10% on the handicapped.[79]

3.2 Funding Sources for Vocational/Technical Education

The Vocational Education Act of 1963 and its Amendments of 1968 funded a comprehensive range of activities. The 1963 Bill largely reached the in-school population through expanded facilities.[80] While authorizing funds for teacher training, curriculum development, vocational guidance and counseling, and requiring that each state use a portion of its federal funds for these services.[81] The 1968 Bill authorized funds for research-based demonstration programs, the creation of the National Advisory Council on Vocational Education (in an attempt to form a national leadership network) to be augmented with state advisory councils,[82] and work-study and cooperative education programs.* The 1968 Act outlined the formula for annual federal appropriations to be matched by the states, based upon the per capita income of each state and the "number of persons in the various age groups needing vocational education...". To claim its federal funds, each state must submit its plans for present and future vocational education programs.[83] The last stipulation would hopefully remove vocational education from the realm of the impressionistic, hit-and-miss; it is an attempt to provide a long-

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*Work-study arrangements are those allowing needy students to engage in part-time work while pursuing their vocational education; cooperative education programs allow needy students to earn money by working in a position closely-related to their occupational field, accumulating what effectively becomes on-the-job-work experience.

term planning structure. Finally, the need for a meaningful data collection and collation system was also recognized.[84]

3.3 Pedagogic Changes Within Vocational/Technical Education

The trend of pedagogic changes is loosely summarized by Cochran in his study of 35 innovative secondary vocational education programs: there was a decreasing emphasis upon crafts content and manipulative activity; there was an increasing emphasis upon content designed to give the student a basic idea of industry as a sector of the economy, and activity was constructed to progress from this to performance of more specific tasks.[85] One might infer that academic content was rising while performance options were falling. This trend would seem to be borne out by new curricular concepts of vocational education. Of growing importance are clustering and career education, two concepts previously defined.

Vocational/technical education has, like many other pedagogic specialties, gone through substantial change in recent years. Narrowly-defined programs preparing the student for one job only with a heavy crafts orientation are being replaced by more comprehensive programs regarding the total technological society, and the place of industry and the worker within it. The change in curricular direction is being encouraged and implemented "at the top," as the state and the federal education offices develop career education and clustering materials. Resultant materials, with a more-heavily academic tinge may be more amenable to wide-scale dissemination than materials designed for narrow specialty areas.

Attempts are being made to forge a semblance of state-wide or national policy on the issue of educating young Americans for work. The road towards change has been partially paved by stipulations of the 1963 and 1968 vocational/technical education legislation. In addition to funding an array of supportive services (i.e., research and development, teacher and counselor training), the effect of this legislation has been to demand statewide short-term and long-range vocational/technical education planning with particular attention paid to those elements most in need of occupational training--i.e., the disadvantaged and the handicapped. Creation of intensified state-wide interest in vocational/technical education, with defined sub-populations to be served, may prove to be the building block of supra-state and regional organizations necessary to respond to a large-scale technological delivery system.

3.4 Department of Labor Efforts to Develop a Computerized Job Bank and Forecasting Network

The Department of Labor currently has both research and demonstrations underway to expand both the totality and accessibility of information regarding current job openings and manpower forecasting. Mandated by the 1968 Amendments to the Manpower Development and Training Act, development in three areas was called for: 1) compilation of a comprehensive labor market information system including national, state, and local inputs, 2) collection and publication systems for posting job vacancies, and 3) better matching techniques for unemployed and low-income job seekers with job openings. The third mandate particularly requested maximum utilization of electronic technologies, specifically data processing and telecommunications.[86]

In the area of manpower forecasting, the project resulting in the Annual Manpower Planning Report provides coordinated information so that state and local services had a basis from which to develop a Cooperative Area Manpower Planning System (CAMPS). All states and 150 "major labor areas" were involved during FY 1972.[87]

In the area of job market information, work is currently in progress on a National Computer Job Bank. The Manpower Administration hoped to have this fully operational, serving the entire country via 2,200 local cooperating agencies, by July, 1972. As of 1971, the job bank serviced more than 100 cities. Computers are used to compile and update job orders daily. A printed book of the orders is then distributed to participating agencies daily. The book may be in traditional printed form, microfilm, or microfiche. The local agency then notifies appropriate applicants by phone. In 1971, selected groups of job seekers (rural residents, veterans, engineers, and scientists) were allowed to scan the book directly. Also during 1972, seven states tested two computer vocabularies designed to match applicants with job openings. Four states, Wisconsin, California, Utah, and New York, continued throughout 1971 their experimental matching systems. Demonstration began during 1972 on a Job Development Bank; this is a computerized system to develop future job possibilities based upon types of employment available in a community. To further promote development of a streamlined national labor market system, the Department of Labor has awarded the Secretary of Labor Fellowship Program in Manpower and Computer Technology fellowships. At the end of 1971, 18 such fellowships had been awarded.[88]

3.5 Effectiveness of Vocational/Technical Education

Another issue concerning vocational/technical education concerns its effectiveness; this is a complex concept and may be gauged according to any number of criteria. This section will attempt to answer this question in two ways: 1) by examination of statistics regarding

occupational placement of the various target audiences, and 2) by examining labor market realities and projections.

3.5.1 Effectiveness Measured by Occupational Placement

A major claim of effectiveness will rest upon whether vocational graduates are able to find jobs for which they were prepared by their studies. Longitudinal studies of vocational alumni are not plentiful, particularly on a comprehensive (i.e., regional or national) level. Generally, it would seem that vocational graduates find jobs, but not always in their chosen field. The result, therefore, may be termed mixed. The national follow-up study of 1966 vocational graduates found that employment did not always follow training; most (presumably more than one-half) of the post-secondary and junior college graduates found initial placement in their field of training, but the percentage slipped to one-fourth for high school vocational graduates.[89] This finding is indirectly substantiated by the 1969 profile of vocational students of all instructional levels which noted that approximately one-half worked concurrently with their schooling, and of this group over one-half held related jobs.[90] It may be hypothesized that graduates holding initial jobs related to their field of study simply filled them full-time upon graduation. The 1969 follow-up study found that health and technical graduates were the most likely to have subsequent employment in their chosen fields, with agriculture graduates the least.[91] The issue of occupational mobility, or labor force movement among occupations, is beyond the realm of initial placement statistics.

Another measure of vocational education's effectiveness is cost-benefit comparisons, or the relationship between the cost of obtaining an education and the benefits (i.e., wages) enjoyed as a result. Here the authors of the national follow-up study warn that conclusions should be drawn cautiously, if at all.* Generally, the finding is that junior college vocational education graduates have better labor market performances, in terms of wages, than other post-secondary or high school graduates. Even then, it will usually take the junior college graduate 5 years and 2 months of working to recoup his investment in his education.[92] The authors suggest that the cost-benefit ratio does not mark post-secondary vocational education as efficient.[93]

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*The authors found it difficult to collect cost data, since reporting rates were in the 50% range from secondary and post-secondary schools on this point. The cost figures used in the study were the results of previous studies identified within the report. (Somers, ED 055 190, p. 202)

Follow-up placement statistics were not provided for the handicapped or disadvantaged, but other findings did emerge. Geographically, the benefits from vocational education are highest in the West, followed by the Northeast and the North Central; the lowest benefits accrue to graduates in the South. Once out in the labor market, male graduates outperformed female graduates in terms of employment and earnings; older, and married, graduates did well.[94] There is a paucity of data on what the different vocational programs cost and the working benefits of each. Basically, distributive education had the lowest program costs and technical education the highest program costs. The costs of health education varied by program. In terms of benefits (earnings), distributive, technical, and health education had the highest earnings.[95]

The preceding findings do not point to a clear-cut conclusion. Initial placement figures do not indicate that vocational and technical education graduates unemployable personnel any more than the regional data indicates vocational education inefficiency in the South. Rather, the data might be further explained by additional factors operating on supply and demand within the labor market.

3.5.2 Effectiveness Measured by Labor Market Realities and Projections

Vocational education is not the only source of supply of labor market entrants. Consideration of this fact might be termed labor market realities. The types of workers needed by the labor market changes over time. Consideration of this fact might be termed labor market projections. Each will be considered in turn.

Individuals seeking a position requiring training below the college-degree level may be prepared by means other than formal instruction. Trained workers may be supplied by on-the-job training, Manpower training programs conducted by government agencies or government-subsidized programs in the private sector, or by the return to civilian life of personnel trained while in the armed forces. On-the-job training is a broad classification encompassing apprenticeship, or any formal or informal mechanism for transmitting occupational knowledge while the individual is working in some capacity. All of these training routes affect vocational education in terms of product (an employer's assessment of the prospective employability of a vocational graduate) and planning (determining the size of the vocational education effort to be made vis a vis the labor market).

The 1972 Manpower Report of the President notes that most blue-collar skilled workers receive their training on-the-job, usually in an informal manner, sometimes by participating in a formal apprenticeship program.[96] As of early 1972, 350 skilled occupations were considered apprenticeable trades. Enrollment in registered programs was estimated at 379,000 in 1970, with enrollment in unregistered programs for that year estimated at "...half as many...".

By the end of 1971, there were over 130,000 minority apprentices (mostly black) placed through the AFL-CIO/Department of Labor Outreach Program. This represents a doubling of minority participation over 4 years. Generally, entrance into an apprenticeship program requires a high school education and passing an entrance exam. Program length may vary from 2-5 years, although most are less than 4 years.[97]*

Table 7, which includes school, training while in the armed forces, and apprenticeship within the "Formal" category, indicates that only three of the seventeen randomly-selected occupations listed had more practicioners trained by formal than informal means. Professional nurses, tool and die makers and setters, and stenographers, who constituted the formally-trained group, were the only ones who felt that their formal instruction was more helpful than on-the-job training received. Apprenticeship remains an important way of training entrants for the construction crafts and other skilled crafts (particularly metalworking).[98] Table 8 indicates that even international immigration of skilled craftsmen into this country fills more jobs than does vocational education. Skilled workers who had some formal training usually got it through an apprenticeship; however, on-the-job training was usually felt to be superior even to apprenticeship! (Table 9)

The armed forces, of necessity, have become large trainers of vocational/technical personnel. When returning to civilian life these military-trained individuals become a source of skilled labor for the labor market. The results of military training programs on the civilian economy are difficult to gauge, since assessments range from: the military utilized skills the individual possessed prior to military duty; military skill training helped civilian employment prospects but only in conjunction with other elements of the individual's record (i.e., level of education), and that military and civilian skilled occupations did overlap to the extent that the military became the largest source of supply for airplane mechanics and a major supply source for welders, electricians, auto mechanics, and other technical occupations.[99] In spite of the generally neutral

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*Efforts to change apprenticeship programs as they now exist are underway on 2 levels: 1) to broaden the scope of programs considered apprenticeship programs, and 2) to broaden the scope of recruitment for apprenticeship programs. To broaden the scope of apprenticeship programs the Department of Labor's Bureau of Apprenticeship and Training is revising the criteria for classifying apprenticeship programs as such, lowering the minimum training time to 1 year from 2 years, and exploring the possibilities of self-pacing apprenticeship programs by financing pilot programs in 8 trades. To broaden the scope of recruitment, efforts to enlist women and minorities are encouraged. (Manpower Report of the President, 1972, pp. 94, 95)

TABLE 7

CIVILIAN LABOR FORCE 22-64 WHO COMPLETED LESS THAN 3 YEARS OF COLLEGE: THEIR TRAINING FOR CURRENT JOB AND APPRAISAL OF THAT TRAINING
(selected categories)
April, 1963

	Percent Who Received:		Percent of Workers Who Felt Most Helpful Track Was:	
	Formal[1]	On-the-Job[2]	Formal	On-the-Job
All Occupations	30	56	12	37
Prof., Tech., & Kindred	65	67	30	35
Nurses, Prof.	92	39	56	12
Farmers & Farm Managers	21	18	4	8
Managers, Officials & Proprietors, except farm	36	57	11	33
Clerical & Kindred	54	71	22	47
Stenographers	94	66	54	26
Sales Workers	23	60	6	43
Retail	16	55	4	41
Craftsmen, Foremen and Kindred	41	65	17	37
Tool & Die Makers & Setters	65	55	41	24
Operatives and Kindred	13	62	5	48
Packers & Wrappers	5	60	1	45
Private Household Workers	10	9	5	5
Service Workers (ex. Pv't. Hsld.)	25	46	12	31
Farm Laborers & Foreman	11	19	3	14
Laborers, ex. farm and mine	7	40	3	30

[1]Includes school, apprentice and military skill training programs.

[2]As opposed to: on-the-job instruction by supervisors or fellow workers, company training courses of less than six weeks full-time (longer: considered "formal"), and working way up. These two tracks exclude learning from friends or relatives, just picking it up, and other.

Source: Vocational Education Planning Manpower, Priorities, and Dollars
Young, Clive, Miles.

TABLE 8

REPLACEMENT NEEDS FOR SKILLED WORKERS IN THE U.S. IN TRADES HAVING APPRENTICES: PROPORTIONS MET ANNUALLY BY VARIOUS TRAINING PROGRAMS

Formal Training:	
Apprentices, registered:	32.4 - 38.4%
Completing Training	12 - 16 %
Leaving Without Completing	6 8 %
Apprentices, not registered	14 %
Vocational School graduates	.4%
Immigrants, trained abroad	4 %
Proportion without formal training	57.6 - 63.6%
Total	100 %

Source: Estimated by research staff of the National Manpower Council, Wason: 1337.

Source: Vocational Education Planning
Manpower, Priorities, and Dollars
Yong, Clive, Miles

TABLE 9

APPRENTICESHIP AND SCHOOLING COMPARED FOR SELECTED CRAFTS: U.S.A., 1963

	(1) Number in Trade (000's)	(2) Percent Taking Training in:	(3)	(4) Percent Indicating Most Helpful Training Was:	(5)	(6)	(7) Ratios Most Helpful to Took Training In:	(8)
		H.S.	Appr.	School	Appr.	OJT & Worked Way Up	H.S.	Appr.
Constr. Crafts	2850	18.2	43.9	4.3	11.0	27.0	.24	.25
Machinists	763	21.2	34.9	10.4	19.7	31.4	.49	.56
Tool and Die Makers	N.A.	N.A.	N.A.	8.8	32.6	21.5	--	--

Source: Derived from Bedell and Bowlby, Tables 4 and 11.

Note: Schooling in column 4 is not strictly comparable to column 2, the former including high school, junior college, technical institute, special school, and also company schooling (when it was full-time for at least six weeks). But high school as a percent of total school (including company schools) was roughly 50 percent for both construction and machinist trades, indicating some similarity in the importance of high schooling as a percent of total formal schooling.

Source: Vocational Education Planning - Manpower, Priorities, and Dollars
Young, Clive, Miles

assessment given the military as a source of skilled labor supply, there are three notable instances where military skill training may be important to the recruit in later life: 1) low-ability ex-servicemen who were able to learn skills while in the armed forces, 2) non-whites who learned skills, and 3) "true enlistees who served in a preferred military vocational area...".[100]

Other sources of trained manpower are government training programs which are primarily designed to break the poverty hammerlock on certain segments of society by training individuals in skills and placing them in related jobs. (See Table 10.) Examples include programs under the Manpower Development & Training Act and the Neighborhood Youth Corps. Programs under each Act may take place in a variety of settings, from in-school to on-the-job instruction. Additionally, there are an array of specialized programs (i.e., "Operation Mainstream," to train and place the hardcore unemployed adult and disadvantaged rural senior citizens). Special note should be taken of JOBS, which is an acronym for Job Opportunities in the Business Sector; private businesses open places for the traditionally-unemployed, providing training, and receiving a federal subsidy. Table 11 does not indicate placement rates, but it can be seen that programs and enrollments have proliferated. Projections for FY 1972 are for 2.3 million enrollees and funding at $4.3 billion. FY 1973 projections are for nearly-stable enrollments and $5 billion in funding. FY 1973 budgetary requests favor high unit-cost programs, such as PEP, over low unit-cost programs, such as some on-the-job training programs.[101]*

The projected American labor force of the 1970's appears to be a continuation of trends from the 1960's, only the pace of change will be slower. More specifically, this means that competition among young, skilled workers will be keen as the economy continues its shift to service orientation from production of goods.

The labor force will be young (more will be 34 years of age and less), more educated, and more racially diverse.[102] This will be the competition in a market continually demanding specialized manpower. Employment growth rates above those for total employment will continue for professional, technical, and kindred workers and for those service workers who are specialized (i.e., health service workers). Job openings will occur due to economic growth or replacement (jobs already in existence which will have to be refilled). It is expected that most of the job openings will occur due to replacement--3 out of 5 throughout the '70's.[103]

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*The effectiveness of government-sponsored Manpower Training Programs have been questioned, most recently in a report issued by the staff of a subcommittee of the Joint Economic Committee. The report disputed Nixon administration officials' claims that many training programs are ineffectual with the notable exception of JOBS. Using the criteria of graduates' salaries outstripping training costs, the subcommittee staff report found on-the-job training under the Manpower Training Act to have the best track record, and the JOBS Program with an unsubstantiated, but probably dismal, record. St. Louis Post-Dispatch, Tuesday, November 21, 1972, "Government Job Programs Help Some Trainees But Most Get Little Benefit, According to Study," Sec. , Cols.

TABLE 10

NEW ENROLLMENTS[1] IN FEDERALLY ASSISTED WORK AND TRAINING PROGRAMS, FISCAL YEARS 1964 AND 1970-73
(Thousands)

Program	Fiscal Year				
	1964	1970	1971	1972 (estimated)	1973 (projected)
Total	278	1,830	2,109	2,318	2,292
Institutional training under the MDTA	69	130	156	166	166
JOBS (federally financed) and other OJT[2]	9	177	184	136	131
Neighborhood Youth Corps:					
In-school and summer		436	562	583	567
Out-of-school		46	53	49	49
Operation Mainstream		12	22	22	22
Public Service Careers		4	45	32	29
Concentrated Employment Program		110	77	69	69
Job Corps		43	50	53	55
Work Incentive Program		93	96	112	133
Public Employment Program				160	92
Veterans programs	(3)	83	86	83	83
Vocational rehabilitation	179	411	468	517	558
Other programs[4]	21	285	311	335	339

[1]Generally larger than the number of training or work opportunities programed because turnover or short-term training results in more than one individual in a given enrollment opportunity. Persons served by more than one program are counted only once. Therefore, totals for some programs differ from those for first-time enrollments in appendix table F-1.
[2]Includes the MDTA-OJT program which ended with fiscal 1970 (except for national contracts) and the JOBS-Optional Program which began with fiscal 1971; also Apprenticeship Outreach, with 27,500 enrollees in fiscal 1971.
[3]Included with "other programs."
[4]Includes a wide variety of programs, some quite small--for example, Foster Grandparents and vocational training for Indians provided by the Department of the Interior. Data for some programs are estimated.

Note: Detail may not add to totals because of rounding.

Source: Office of Management and Budget, Special Analysis, Budget of the United States Government, Fiscal Year 1973, pp. 140 and 142.

Source: Manpower Report of the President, 1972, Department of Labor, Washington, D.C. (1972).

Vocational/technical education provides workers for both white-collar (i.e., technical workers) and blue-collar (i.e., cosmeticians) jobs. Job categories in the white-collar strata expected to grow in the coming decade include professional/technical workers, and clerical workers; other white-collar classifications expected to hold their own include manager/proprietors and sales personnel.[104]

The term blue-collar encompasses a wide range of personnel, from skilled labor through semi-skilled workers to nonfarm laborers. Jobs within each category may be located in different industries. Generally, skilled, blue-collar labor includes craftsmen and foremen, who are largely concentrated in manufacturing and construction. Manufacturing is not expected to register record employment growth, while construction is expected to register a 35% employment increase for an additional 1.5 million workers. The result of this mixed outlook is that employment within this occupational segment will rise more slowly than total employment.[105]

The blue-collar category of booming employment expectations is the service area. This includes workers of various degrees of skill who deliver a particular service, i.e., ranging from FBI agents to beauticians. Employment is predicted to increase at one and a half times that of the aggregate economy, from 9.4 million in 1969 to 13.1 million by 1980. The brightest spot within this category will be the health service workers, who will increase from 800,000 to 1.5 million within the same time period.[106]

Semi-skilled, blue-collar workers are generally employed in factories. Previously this group had experienced rapid growth as a function of technological improvements. This trend is not expected to continue, for employment is expected to stabilize. Stabilization is attributed to continued technological improvements of an increasingly-sophisticated nature. In numbers, a rise from 14 million in 1969 to 15.4 million by 1980 is projected, but this will be a decreasing percentage of the labor force (from 18.4% to 16.2%). Employment prospects may well depend upon growth and technological implementation within specific industries.[107] Other blue-collar occupations that present a mixed picture are: non-farm laborers, who are primarily employed in manufacturing and construction; and farm workers, who will continue to face a declining market for their services.[108]

A wide diversity of individuals will be pouring into the American labor market during the 1970's. A college-degree will not be universally demanded. The emphasis for non-college-degree people will be on some degree of skill in growing/or emerging occupations. Here the ability of formalized, instructional programs to train personnel may have been accepted for a broader range of occupations. It appears that technological displacement is largely occurring in the goods-producing sector rather than in the service-rendering sector. No definite labor market guidelines can be developed, in large part due to the cursory nature of the overview presented in this section.

However, the entire area of labor market projections for vocational education planning is of interest. Within this context, attention should be paid to the methods used in arriving at projections. Generally, there are four: 1) Employer surveys, 2) Extrapolation of trends, 3) Econometric techniques, and 4) Job vacancy--Occupational outlook approach. Each method has its own advantages and disadvantages, simplicities and complexities, methodology and assumptions; all need some degree of perfection to increase their accuracy and reliability. Some of the more prevalent predictive difficulties are: the propensity of the forecast to become unreliable for the furthest point of the forecast period, the difficulties in gauging the relationship between education and specific jobs, the failure of the various methods to take into account factors other than occupational change that may affect the economy and the prospects for employment (i.e., tight money, inflation, etc.), and the distinctions between occupations that may affect placement.[109]*

3.6 Trends and Issues Concerning Institutions Outside Formal Educational Structures

Proprietary vocational schools are about to shed their peripheral status in relation to the officially-recognized structure of American education. This development was legislated by the Education Amendments of 1972. Less-official forces are aiding change in the same direction. It is anticipated that proprietary school enrollments will increase, attributable -- in part -- to the inability of public education vocational facilities to keep up with the labor market demand for skilled personnel.[110] It was noted in an Oregon Educational Coordinating Council report that private vocational schools could accommodate one-half million additional students with their current facilities.[111] Peck and Belitsky mention a potential role for proprietary schools as specialists handling by arrangement some of the vocational instructional needs of public schools.[112] Their status as part of large, corporate umbrellas opens doorways of expanded resources and respectability. The exact intent of corporate owners may be debated; whether it is to rely upon the schools primarily as an investment, a company manpower trainer, or as a means of related market expansion remains to be determined. However, there is a general consensus that the proprietary school's future role will be expansionist, and that existing state and local educational structures should recognize the advantages afforded by proprietary schools and coordinate educational activities and discussions accordingly.

The Education Amendments, passed by Congress in June, 1972, recognize the role of proprietary vocational schools in effectively bringing occupational education to the post-secondary target audience. Specifically, the 1972 Amendments authorize the States to spend their share of federal funds within private proprietary institutions when: 1) proprietary schools have been considered to be an effective means

*For a more detailed discussion of the general topic, individual forecasting approaches, see Young, et. al., Vocational Education Planning - Manpower, Priorities, and Dollars, pp. 19-34.

of implementing occupational education (Sec. 1056 (b)(1)), 2) grants may be made to proprietary institutions who are able to provide occupational education programs on a contract basis (Sec. 1057, (b)), and 3) grants may be made to proprietary institutions for special demonstration projects illustrating occupational education programs serving an audience/subject area of special concern (Sec. 1059, (C).[113] The 1972 legislation, with reference to special demonstration projects, countermands preceding legislation, which did not allow federal money to go to profit-making educational institutions. Furthermore, the Amendments charge each state with the establishment and/or designation of an agency or Commission to plan for implementation of the post-secondary programs outlined in the Act. The Commission is directed to be representative of all elements involved in post-secondary education, including technical/vocational schools and proprietary schools.[114] The concern for providing adequate vocational education opportunities at the post-secondary and continuing-education levels has brought proprietary educational institutions within the rubric of recognized educational structures.

Two issues affecting proprietary vocational schools deserve attention: 1) accreditation, and the advantages to graduates of accredited educational institutions, and 2) inability to grant associate degrees, or other recognized degrees. Accreditation of any U.S. educational institution is carried out by recognized accrediting agencies and not by any level of government.* The U.S. Office of Education recognizes agencies representing occupational specialties, forms of instruction (i.e., The National Home Study Council Accrediting Commission), and geographic regions. Accrediting agencies exert no legal control over the institutions they acknowledge, nor is it legally required that an institution be accredited to function. However, accreditation and the knowledge that an institution has met certain standards predetermined by the appropriate accrediting agency, is important. The regional accrediting agencies are responsible for secondary and higher educational institutions within its geographical area. Accrediting agencies for occupational specialties and forms of instruction are national in coverage area. Occupational specialty accreditation is concerned with a particular institution's competence in training students for that specialty.[115] Competence is determined by criteria felt to be of commensurate importance in evaluation of the course of

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*Regarding the non-governmental accrediting procedure in the U.S., the New York Times Guide to Continuing Education in America, 1972, writes: "There are indications that this may soon change under mounting pressures, primarily of a social and fiscal nature, but at least in the present it is true." (p. 72). See Appendix for the U.S. Office of Education recognized accrediting agency list as of April, 1970.

instruction offered.* Individual states may issue licenses, permits, or even accreditation to proprietary schools. However, a 1970 survey conducted by the Oregon Educational Coordinating Council revealed that state recognition would often be based upon criteria other than instructional competence, such as the school's ability to post surety bond, or to pay license, permit, or renewal fees.[116]

Students graduating from private vocational schools, accredited or unaccredited, do not receive associate degrees in their specialty. This situation has been under attack. As of 1969, Pennsylvania was reported to be considering the possibility of allowing proprietary schools associate-degree granting powers.[117] On a broader scale, a suit was brought against the Middle States Association of Colleges and Secondary Schools, Inc. (a regional accrediting agency, hence concerned with degree-granting institutions), regarding the Association's provision that accreditation is only awarded to non-profit educational institutions. The decision by the U.S. District Court for the District of Columbia in that case (referred to as "the Marjorie Webster decision") was against the Middle States Association on the grounds of restraint of trade and denial of constitutional due process. The decision was overturned by the Court of Appeals.[118] The Supreme Court was asked to hear the case, and refused on December 14, 1970.[119]

Although the degree-granting powers of private vocational schools is apparently still in flux, their inability to do so will not hinder their expanding role in providing educational opportunities to those people interested in their subject offerings. Now that proprietary schools have come under the umbrella of recognized post-secondary education agencies (Education Amendments of 1972), the task for the individual states is two fold: 1) to coordinate all post-secondary educational activity within their jurisdiction, and 2) to develop instruments of evaluation for proprietary vocational programs. In view of the patchwork of current state procedures, completion of this task alone will be instrumental.

Positive assessments of private vocational schools by both researchers and students, have evolved from a number of considerations. A prominent reason is that private schools retain good working contacts with industry. This is helpful in two respects: 1) the schools are able to keep current, often being the first to offer training in a new

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*For example, the NHSC considers eight criteria that must be met to its satisfaction before accreditation is awarded: "1) Competent faculty, 2) Educationally sound and up-to-date courses, 3) Careful screening of students for admission, 4) Satisfactory educational services, 5) Demonstrated ample student success and satisfaction, 6) Reasonable tuition charges, 7) Truthful advertisement of courses, and 8) Financial capability of giving high-quality service." (Correspondence Instruction in the United States, p. 113)

occupational specialty, and 2) the schools are able to place their students in jobs, thanks to their continued contact with the working world. Because they are private, and freed of the hierarchial constraints of the public educational sector, a different tone prevails in these schools; students are treated as clients--whose time is not to be wasted, and teachers are not given tenure--their continued status dependent upon teaching ability.[120] The House Republican Task Force on Education and Training in their report given to the House Republican Conference in August, 1970, noted the ability of proprietary vocational schools to respond quickly to, and concentrate effectively upon, the special needs of students. Specifically mentioned were those students who failed to achieve success in academic situations, handicapped students, and non-English speaking students.[121]

Negative assessments of private vocational schools usually stem from the fact that they are profit-making organizations. Their profit motive leaves the schools open to criticism on two counts: 1) tuition is high, and 2) not every private vocational school is accredited, thus giving a shady aura to the entire sweep of high-tuition private vocational schools.

4. The Media In, and Costs Of, Vocational/Technical/Career Education

Providing vocational education is expensive, yet it is offered within a broad range of costs.

It is expensive to vocationally educate someone. In spite of this, private vocational schools are not money-losing operations. The Correspondence Education Research Project, writing in the mid-sixties, noted that private home-study schools return net profits in the 4-12% range.[122] Private residential vocational schools were rated by a Bank of America study as a sound investment.[123] A 1970 House Republican Task Force on Education and Training Report noted a proprietary vocational school could return 9-15% of its gross annual income after taxes.[124] Tuition costs vary with the course, but generally they are well above those of the closest community college. One cost estimate, given for one-year of attendance, ranged from $850-$900. This was contrasted with the 1969-1970 cost of a public junior college (average: $148) and a public vocational school (free).[125] In 1966, the average tuition charged by member-schools of NATTS was $1,200; the tuition range was from $100 to $4,500.[126] The cost of a correspondence course from a private home study school may also be steep; costs may range from $50-$1,000.[127]

With the exception of the military, which uses non-print instructional materials for vocational/technical training, examples of large-scale media use in vocational/technical instruction are not in abundance. Computers appear to have possibilities for vocational counseling and management of teaching specific curricula. A multi-media approach is not widely in evidence, perhaps due to lack of opportunity for experimentation. Instructional television may become an effective means of disseminating material intended for a broad audience, such as career orientation material.

4.1 Multi-media: The Federation of Rocky Mountain States Experiment

On the drawing boards is an example of large-scale delivery of career education. The current plan of the Federation of Rocky Mountain States is to bring career education and orientation to its eight-state region which consists of Nevada, Colorado, New Mexico, Idaho, Arizona, Wyoming, Montana, and Utah. Using television, two-way audio, two-way video, computer-based programs, print, and on-scene coordinators the Federation hopes to reach the in-school adolescent population and school staffs with career orientation and exploration. Programming will include in-service activities for the professional staff and instruction for students. It is hoped that the total effort will raise community awareness of career education, and cognitively and affectively orient students to their working future. Programming of this nature, specific to a defined economic and geographic region, is made possible by technological advances allowing delivery to a broad enough area and requiring comprehensive planning on a high enough level.[128]

The Federation of Rocky Mountain States will use the NASA ATS-F satellite to interconnect existing ground networks and expand coverage within the region. Programming will begin in 1974. Therefore, cost figures are not available. However, the programming cost is budgeted at $1,200,000.[129] Programming cost includes purchase of finished work from outside subcontractors, a remote production unit, staff and operational expenses of the mobile unit, and a supply of video tape; since the figure cited is for programming, it may be assumed that the total figure includes production of the Early Childhood Education component of the Rocky Mountain Demonstration.[130]

4.2 Computerized Vocational Guidance and Information Systems

Computer-assisted instruction is being developed to aid students when deciding among career options. In that capacity, CAI will upgrade the quality of vocational counseling by relieving the counselor of routine, but time-consuming, information dissemination, thus freeing him for involved counseling matters. Both of the CAI systems detailed in this section are also concerned with involving the student in the process of decision making, thus giving him a skill he will be using throughout his lifetime.

The Computerized Vocational Information System (CVIS) is a cooperative project of Willbrook High School and the College of DuPage, funded by the State of Illinois Board of Vocational Education and Rehabilitation, Division of Vocational and Technical Education. Operating at the junior high, senior high, and community college levels in a suburban community west of Chicago, CVIS has been developed as a means of orienting students at each instructional level to the variety of career options available to them that are in line with the individual's background and preferences as shown by type and quality of school work, extra-curricular activities, test scores, and selections and responses to computerized scripts and related questions. By using the branching technique, CVIS aims for individualization of information, either isolating difficult counseling cases or providing student's with relevant information at a decision-making juncture. An example of the last point would be the secondary student who has established his intention to continue with a 4-year college education; by selecting the proper script, the student is then taught how to consider possible colleges, invited to determine where he stands regarding the relevant variables, and provided with a list of colleges that meet some, or all of his specifications. The CVIS system was being expanded to provide for other junctures, such as local job opportunities for students leaving community college prior to graduation, or the secondary male student interested in the military.

CVIS was operational at the secondary and community college levels, and was being expanded for the junior high level. The program was operational through June 30, 1971, at least, with development having begun in January, 1967. At the secondary level, career options included

continued academic study (including post-secondary technical schools), entry-level jobs available locally, military service, apprenticeships, and occupations. Development, operational, and equipment costs were not provided. Hardware is IBM, programming is in basic assembly language, with the computer center at the College of DuPage County in Glen Ellyn, Illinois, serving Project CVIS, the College of DuPage, and the DuPage County Data Processing Cooperative. Service to the remote terminals in the system is via telephone lines.[131]

The System of Interactive Guidance and Information (SIGI) is being developed by the Educational Testing Service to aid the counseling crunch at the community college level, under funding by the Carnegie Corporation and the National Science Foundation. SIGI is designed to aid the community college stu ent in planning his course of studies by helping him to determine his ultimate career goal. In a series of computer-student interactions based upon the student's occupational values as related to pertinent information regarding job information, curriculum planning, and likely success, the system endeavors to equip the student with a viable career plan and decision-making skills.

SIGI has been completed by the Summer of 1972, and will be demonstrated at Mercer County Community College, New Jersey. The system has been designed so that it will have wide applicability at a number of institutions. Possible hardware configurations include on-site capability or remote capability. On-site capability allows for eight local terminals utilizing a Digital Equipment Corporation PDP-11 minicomputer. Remote capability allows for twenty or more remote site terminals services by the same computer equipped with additional core memory and discs connected by telephone lines.

Cost is figured by adding operational expenses and indirect costs based on a usage rate of 1,200 hours annually, or 200 days annually at 6 hours per day. Comparatively, at the same usage rate, a counselor salaried at $15,000 per year would cost approximately $12.50 per hour. A SIGI installation is expected to cost $3 to $5 per hour, prorated accordingly: a 6-station set-up would cost between $2 to $4 per hour with the possibility of an additional $1 per hour in indirect costs, such as power, space, etc. Cost forecasts are based upon outright purchase of the equipment, 5-year uniform depreciation, and maintenance contracts for parts and labor on all equipment.[132]

4.3 Media Use for Occupationally-Specific Curricula

4.3.1 The Southern California Regional Occupational Center

Occupationally-specific programming has not been ignored. The Southern California Regional Occupational Center (see Appendix) has utilized non-print media (computer management of self contained, multi-media instructional packages) to teach 1000 D.O.T. (Dictionary of Occupational Titles) specialties.[133] Although initiated by a single

school district (the Torrance Unified School District), the Southern California Regional Occupational Center assumed its present status when the Torrance District was joined by six other districts to serve a combined audience of 25 high schools. This example may serve to underscore the necessity of cooperative efforts among school districts if resources are to be pooled to effectively utilize a variety of media in vocational instruction.

4.3.2 Project REACT

The Northwest Regional Laboratory in Portland, Oregon has developed REACT (Relevant Educational Applications of Computer Technology) which uses CAI to teach electronics and welding (in the vocational area) to rural students in parts of Idaho and Washington.[134] The rural students worked from terminals within their schools that were connected via telephone lines to a central computer in Seattle.[135] This example of CAI usage on a regional basis also may be cited to illustrate coordinated efforts to service outlying school districts. Utilizing available equipment on a wide scale, whether through consolidation, cooperation, or regional consortia may prove the viable means of bringing vocational/technical education to rural schools in the face of manpower shortages and the expensiveness of vocational/technical education equipment.

Washington State University has developed another technique for using media in vocational/technical education. A small, portable film viewer has been devised so that students may individually view filmed lessons in subjects otherwise unavailable in their schools. The devise has been used in rural Washington schools to teach, in the vocational/technical area, welding.[136]

4.3.3 Suitability of Military Vocational/Technical Training Materials and Techniques for Civilian Educational Use

With the success of the military in massive vocational education, there has been some concern if the same techniques could be applied to civilian vocational/technical education. Vocational Instruction Systems of the Air Force Applied to Civilian Education (Praeger, 1971) reports the result of a study of this question. The state of Utah and Hill Air Force Base (within the state) cooperated to determine if selected Air Force vocational/technical curricula were qualitatively and quantitatively compatible with civilian vocational/technical education requirements, both on the state and national level.[137]

The courses selected were for electronics (Electronic Principles Course), aircraft mechanics (Aircraft Hydraulic Pneudraulic Course), and nurse's aide (Medical Service Specialist Course). Testing took place on both the secondary and postsecondary levels.[138]

The project design was that students enrolled in each of the three courses would be divided into a control group and an experimental group. The control group would receive instruction as usually given at their institution, described as "--chiefly live lecture and demonstration."[140] The experimental group was actually further divided into two groups. One experimental group received unmodified Air Force instruction, in which the emphasis was upon replication of the Air Force system. The other experimental group was given a modified Air Force course, in which necessary changes (i.e.--terminology, deletion of inappropriate materials, etc.) were made. In practice, changes in the Air Force curricula were of an augmentive nature.[141] Due to small numbers, enrollees in the nurses aide courses essentially formed two groups--a control group and an experimental group.[139]

Nonetheless, for experimental groups instruction was different. Vocational Instruction Systems of the Air Force Applied to Civilian Education describes Air Force-style instruction in this fashion:

> In the experimental groups somewhat different procedures were followed, depending mainly upon the types of materials used. In all of them the bulk of the instruction was presented via some medium other than the instructor--film, programmed texts, workbooks of various types, etc. The instructor's major teaching function in the experimental groups was to supplement this information as seemed necessary. Each experimental group instructor had a plan of instruction which specified the objectives of the course and indicated the sequence to be followed in using the software and hardware provided. Nothing comparable to a plan of instruction existed in the control groups.[142]

Summarily, results were favorable for the Air Force curricula for both learning effectiveness (measured by pre and post testing)* and compatibility with civilian education systems. Refinements are that only the electronics course had a sizeable enrollment (252 students),[143] and that the Air Force materials not only had a greater reliance upon audio-visual and pre-packaged materials but also upon criterion-referencing ("That is, they are developed to help a relatively specific target population attain pre-specified criteria of performance when used according to prescribed conditions.")[144] The latter characteristic was, apparently, without precedence in the civilian curricula (at least in Utah), and could have influenced teacher effectiveness in dealing with the material.[145]

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*Modification centers around the nurse's aide course, where post-testing revealed negligible differences among groups, although those receiving Air-Force instruction scored lower on pre-tests. (pp. 60, 67)

The final point of the study's conclusions is worth quoting in full:

> Since there is no reason to believe that the Utah schools are much different from other schools of similar type, it is highly likely that Air Force materials can be used with at least the same effectiveness in a large number of schools outside Utah.[146]

A major consideration of the feasibility of using military vocational instruction materials in civilian educational systems is the cost incurred in converting the materials. In the Utah experience additional equipment needed for the various courses was a factor; this was partially offset by eliminating the original aircraft mechanics course and substituting another aircraft mechanics course requiring less expensive equipment (and some of this was provided by government surplus.[147]

In the case of audio-visual materials, the 37 videotapes constituting a major part of the instruction in the electronics course were converted to film since Utah schools have no VTR facilities. No conversion cost figures were cited.[148] The study noted:

> Indeed, the unit cost for this film requirement would depend almost entirely on the volume involved. Slides and films of equal or better quality, covering basically the same subject areas, are known to be available at market prices, and this use of visual aids is not out of line with the national trend in civilian education. Further, more and more school systems are being equipped to use video tapes, which would lower costs even more if Air Force materials were adapted.[149]

5. Conclusions Regarding the Prospects of Large-Scale Electronic Delivery of Vocational/Technical Education

The one most-outstanding characteristic of vocational/technical education today is change. The presence of change within this educational field is the most important element affecting the future of vocational/technical education with respect to large-scale technological delivery systems. This statement may be explained by examining three elements of contemporary vocational/technical education: 1) the development of an infrastructure that would aid large-scale technological delivery, 2) pedagogic changes favorable to large-scale technological delivery, and 3) location of prospective students and orientation of prospective teachers.

5.1 Infrastructure

A nation-wide infrastructure for vocational education is developing. This infrastructure may be considered the ground-work for a viable information dissemination system to serve practitioners and students which would be a helpful prerequisite for large-scale technological delivery. An important development is the interest shown in both career and vocational education by the United States Department of Health, Education, and Welfare and by the Congress. The legislature's interest, as shown by the Vocational Education Act of 1963, the Vocational Amendments of 1968, and the Higher Education Act of 1972, has been instrumental in encouraging the expansion of vocational education within the last decade. The funding provisions of each act have called for the development of a system of input and feedback whereby funds are distributed based, in part, upon information received from the states. Funding requirements have been instrumental in accumulating nationwide statistics on the state of vocational education, and in stimulating state-wide planning procedures for the expansion of occupational education.

There are other cornerstones of the infrastructure. ERIC (the Educational Resources Information Center) provides a nationwide distribution system (via print publications, microfiche, and computer searches of its files) for educational research. The ERIC center specializing in Vocational and Technical Education is at Ohio State University; another university active in vocational education is North Carolina State at Raleigh. Regional Educational Laboratories established by the Department of Health, Education, and Welfare have addressed themselves to the needs of the region they serve; examples in the vocational area include the work of the Northwest Regional Laboratory in Portland, Oregon, the Central Midwest Regional Laboratory in St. Louis, Mo., and the Appalachian Regional Laboratory in Charleston, W. Va. The National Institute of Education, created by Congress in

1972, was designed to carry on research and demonstration projects for education. Thomas Glennan has been appointed first Director of the NIE. Director Glennan comes to this post after having served as Director of Planning, Research, and Evaluation for the Office of Economic Opportunity.

In addition to Project REACT, the Northwest Regional Laboratory is developing a clearinghouse on a searchable and accessible medium for vocational education materials. The data bank will come from three sources: 1) materials from federal agencies, 2) individual teachers who have developed vocational education materials for special groups (i.e., the disadvantaged), and 3) the location of vocational education materials suitable for use in the Employer-Based Education Program. The Northwest Laboratory is running a related project called "Interact 1" funded by the National Center for Educational Communications; the purpose of "Interact 1" is to make the federally-produced vocational education materials available to education.[150]

Additional cornerstones of the information dissemination infrastructure are the National Audio - Visual Center (the central clearinghouse for federally-developed relevant materials), the National Advisory Council on Vocational Education, the Institute for Education and Technology (EDUTEK) in Lincoln, Nebraska , and the New England Resource Center for Occupational Education (NERCOE) in Newton, Massachusetts. (NERCOE may be viewed as a regional information network.)[151]

Although some of these organizations have relied in large part upon print dissemination, most are aware of the potential of other media for vocational/career instruction. An example is the series of television films sponsored by the National Council on Vocational Education to upgrade the public image of the field.

Not all of the obstacles to a speedy information exchange have been removed. The copyright problem remains, particularly for appropriate materials that have been commercially produced. The basis for a nationwide "language" for the field of vocational education has been provided with the publication of the United States Department of Labor's Dictionary of Occupational Titles which codifies individual occupations (commonly referred to as the D.O.T. number). When used in conjunction with educational materials, the D.O.T. classification scheme provides a commonly-accepted aid to information access and dissemination.

Refinements are shaping the developing infrastructure. The omnibus Higher Education Act of 1972, brings all elements of post-secondary vocational education together for the first time. The implications for state-wide planning, coordinating, elimination of duplicate efforts, and referral look favorable. Effort is now being expended to refine the data collection system and quality of input that make up national statistics in this area. Emphasis on the importance of adequate data and refinements of relevant statistics should help to clarify the situation and aid in planning efforts.

5.2 Pedagogic Changes

To the casual observer, vocational education may appear a fractionalized specialty. The many occupations for which a student may be trained, coupled with the possible confusion arising from curricular labels in relation to actual work roles, may lead one to view vocational education as a highly individual experience. The preceding section has covered the role of the developing infrastructure in helping to forge a viable nationwide, cohesive concept of vocational education. Current efforts within the field are helping to define yet another broad construct for vocational education. The idea of career education, and its ramifications, may be viewed as a broadly-based educational scheme with wide-scale application. As such, career education may be considered the nucleus for development efforts in software with wide-range applicability. This is not to imply that instruction for specific occupations fails to make use of non-print media. At the present, however, it would seem that software developed for the widest market would be in the area of career education.

The delineation of career education is still being articulated. For purposes of software development, career education seems to have these component parts: 1) introduction of the individual to the "world of work," and 2) exploration of occupational options. In terms of software currently in development, these are the applications of career education that have been given the most attention. However, if carried to its logical conclusion, career education ideally involves knowledgeable counseling, access to current information regarding training and employment realities, and accessibility by out-of-school elements of the population. All of these features could combine to give career education software a new dimension; the storage and retrieval of appropriate career education materials for easy accessibility by diverse groups may be of future importance. Examples are the CVIS and SIGI computer-based career decision systems, which may be viewed as pioneer systems which may be suitable for expansion.

Mention has previously been made of the trend towards concentration of ownership of proprietary vocational schools. This trend, coupled with the participation of some of the corporate ownership in related educational and media endeavors, could possibly be a source of future research and implementation of a multi-media approach to occupationally-specific vocational education. However, for the present, large-scale technological delivery seems geared to the broadest application of instruction--namely, career education.

5.3 Location of Students and Orientation of Teachers

Students for occupational instruction may be found in a number of settings; in-school at the secondary, post-secondary, or adult instructional levels, at home (via correspondence), in a combined

school-work setting (i.e., cooperative education programs), or in a working situation. Current work in vocational education has not overlooked the multiplicity of settings where students may be found. The U.S. Office of Education currently has in development four models of instruction, each geared to a different setting: 1) the school-based model, 2) the employer-based model, 3) the home-based model, and 4) the institutional model. Funding to develop plans for these models is $15 million from the FY 1972 Office of Education budget plus monies remaining from the budget of the previous year.*

The school-based model is under contract to Ohio State University's Center for Research and Leadership Development in Vocational and Technical Education. Funding equal to $1,988,004 began in August, 1971. The operational base for this model is in the schools, beginning with the elementary grades when students become familiarized with the working world by learning of different types of jobs and their requirements. At the junior high school level the student studies specific occupational clusters in the classroom and through on-the-job experience. By the senior high level, the student should have accumulated some work experience and be on the road towards specific job skills. Demonstration projects will be established in Hackensack, New Jersey; Jefferson County, Colorado; Mesa, Arizona, Pontiac, Michigan, Los Angeles; and Atlanta.

The employer-based model is designed for those students who remain unmoved by school-based education. This model is seen as an alternate approach for students between the ages of 13-18. The student would work at jobs that coincide with his career plans. While on the job the teenager would receive basic academic training, necessary vocational training, and accumulate helpful job skills and experience. The employer-based model would operate on a twelve month basis. The student would move at his own pace. Jobs would be provided by willing area employers from both the public and private sectors of the economy. This model is under development at three locations; the Far West Regional Educational Laboratory in Berkeley, California, and Research for Better Schools, Inc. are working on a definition of the model's characteristics. They are funded at $2 million. The Center for Urban Education, New York, is planning a pilot study project; it is funded at $300,000.

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*The information on the four models comes from the December, 1971 issue of "Nation's Schools".

The home-based model is designed to reach students in the 18-25 year old range and others who have already left the formal school structure. The model design is to reach this audience at home via equipment individuals could have in their homes, i.e., television, cassettes, and the possibility of accompanying printed materials. The plan is to come into the home with ITV and cassette materials designed to equip the learner with job skills. Media instruction would be buttressed by home instruction and career clinics. The audience is expected to be in large part female.[152] This model is under development at the Educational Development Center in Newton, Massachusetts, and is funded at $300,000. The EDC is developing the model by clearly defining the target audience of potential TV viewers, planning an evaluation instrument for a national career education TV series, and the "Conceptualization and Feasibility of Ancillary Subsystems."[153]

The institutional model will provide a resident institution to service the rural unskilled. The model proposes that entire families be relocated at the centers and trained in appropriate skills (i.e., the mother could learn consumerism, the youngsters concentrate on career skills). A demonstration project, funded at $4 million to run for 5 years, has been established at the facilities of the former Glasgow, Montana, Air Force Base. The Mountain Plains Regional Education Center has been established to service the project.

It is expected that total funding for the school-based and employer-based models will be $5.5 million upon their completion; this distribution among models implies that the basic thrust remains within the existing school structure.

Teacher preparation and continuing education present another possibility for large-scale technological delivery of instruction. Although instructors in private proprietary schools are often working practitioners teaching on a part-time basis, vocational/technical teachers within school systems are often full-time teaching professionals. As the infrastructure develops, a more systematic, meaningful means of keeping vocational teachers current may have been devised. In the meantime, continuing education for vocational teachers is addressing the problem of teacher utilization of resources by acquainting them with the developing infrastructure.

Teacher preparation presents a new opportunity for utilization of electronic delivery of vocational/technical/career education. A process of curricular change and orientation, similar to that within the discipline itself, is suggested for vocational teacher preparation. Emphasis may shift to the more general, broadly-based aspects of preparation, such as integration of relevant academic skills with the vocational curriculum and those elements most common to all occupational education.[154] Should this change be implemented in enough teacher-training institutions, a widely-dispersed, sizeable audience should exist for technological delivery of subject matter.

Lack of follow-up with trained teachers is often cited as a disadvantage of vocational teacher preparation. The design of the Rocky Mountain Project, with its inclusion of two-way audio and video merits attention on this point. The application of two-way instantaneous communication between isolated professionals and resource centers may be a means of alleviating this deficiency. Access via digital data transfer to data banks and computing power at resource centers is another possibility.

5.4 General Comments

Hardware in the form of transmission systems such as wired local distribution plants and communications satellites, computerized data banks and information retrieval systems, user terminals, etc. to implement a large-scale delivery system for vocational and career education is likely to become available in the near future. Communications satellites (fixed as well as broadcast) are capable of wide area coverage and serving diversified locations. However, software development for such a system is difficult to categorize, some already existing but sufficiency and quality being difficult to ascertain. It is possible that sufficient software development may not occur without major changes and new initiatives. Potential audiences can be at least sketchily defined. An infrastructure, largely geared to professionals teaching and planning vocational education, is developing. At least one large-scale demonstration project is on the drawing boards en route to implementation.

In considering prospects for large-scale technological distribution of vocational/technical education, two sub-categories will be considered, namely occupationally-specific curricula and career curricula. The outlook for career curricula based on current trends hold promise; the outlook for occupationally-specific curricula is less promising given the fragmented nature of the curricula. The overall size of the market for large-scale electronic delivery of vocational/technical education does seem suitable. Further research is required to consider new mechanisms for aggregating markets if large-scale electronic delivery is is to be achieved.

5.4.1 Occupationally-Specific Curricula

Potential delivery points for occupationally-specific curricula are: 1) in school, 2) at home, 3) vocational/technical classrooms in the military, and 4) on-the-job instructional set-ups. However, most of these categories can be further broken down to the point where a concise picture of student location becomes difficult. Students receiving instruction in school may be at the secondary or post-secondary level, and at any number of institutions in either case. The in-school student also may be at the university level receiving instruction in how to teach occupational subject matter. At the adult level, the student body may be at a job-training program or at a private proprietary school, of which there are large numbers. There are also the possibilities of delivering occupationally-specific instruction to military personnel or to the home-bound individual.

The diversity of student location is matched by the diversity of curricula. Although educators are currently clustering occupations for simplification of instruction, occupationally-specific instruction still implies the teaching of entry-level skills for a particular occupation. Furthermore, different types of institutions tend to specialize in instruction for different types of occupations. Most of the construction crafts are learned at on-the-job apprenticeship programs. Office occupations tend to be taught either in high schools or in proprietary schools for that purpose. These are but two examples of the complexity of delivering the right instruction to the right place at the right time.

Occupationally-specific instructional material for other-than-print dissemination is available. The military, commercial instructional materials houses, and individual teachers are sources of supply. However, one should remember that new technological specialties are constantly developing, and the ability of instructional suppliers to anticipate and immediately service new occupations may be a problem. In any event, it seems likely that new developments such as video cassettes may find more use than large-scale networks.

5.4.2 Career Curricula

Career curricula holds more potential for large-scale electronic dissemination because the curricula itself has more broadly-based applicability. Arbitrarily, one might divide career curricula into career orientation and career/vocational counseling. Career orientation seeks to direct the student to the working world, its options, responsibilities, and pointers for job hunting. Career/vocational counseling seeks to aid the student in making concrete career plans, whether these involve immediate placement or continued education. The delivery points for this type of instruction are not as dispersed: the potential audience may be reached at home or in school. At home delivery points are feasible when buttressed by some form of supervision, i.e. working in conjunction with school personnel or state employment agency personnel. The Rocky Mountain Demonstration intends to reach a school-age audience at home with support from school personnel.

The formation of wide-ranging interactive computerized networks to make available on demand up-to-date job information and manpower forecasting information may be another promising application of large-scale technology in this field. The Department of Labor is currently working on such a scheme. The quick dissemination of placement and forecasting information may prove to be the most practical application of large-scale electronic technology in this field.

5.4.3 Additional Comments

The final assessment of mixed prospects regarding large-scale technology in vocational/technical instruction is tempered by other considerations. The first consideration involves utilization. One may hypothesize partial acceptance and utilization by professionals in the instructional field; utilization by students is difficult to gauge. Professionals in the pedagogic specialty of vocational/technical education may be divided among teachers, administrators, counselors, and placement officers. Possibly counselors and placement officials will utilize a large-scale dissemination system because

they will see it as an immediate aid to them in their work; they need not fear it as a replacement mechanism. Teachers and administrators may perceive a large-scale dissemination system otherwise. Perhaps the ground for acceptance by this group will be broken by the existing dissemination systems such as ERIC and state agencies; to the extent that teachers and administrations use existing systems and recognize their benefits, the systems planner might anticipate less resistance to a large-scale telecommunication-based dissemination system.

Utilization by the students depends upon additional considerations. Circumstances beyond the system planner's control include the image of vocational/technical education to the general public and economic conditions. Vocational/technical education has been plagued by an "ugly stepsister" image in an age of academic credentialism. Utilization of widely-available vocational/technical instructional materials by students may be less than anticipated due to the inbred hesitation of numerous students and their parents to settle for anything less than the much-valued academic education. Circumstances that could possibly offset this hesitation would be a change in the public rhetoric that has previously glorified academic education exclusively and changes in the health of the economy. It may be that in times of economic downswing, when degreed people cannot find jobs, skill instruction rises in public acceptance.

However, a persistent problem in vocational education is matching training to demand. Denying a college education to groups and individuals who have not had access to higher education in the past under the guise of greater emphasis on vocational education may not prove to be a wise public policy in a post industrial society.

Problems encountered in compiling this portion of the memorandum on vocational/technical education centered primarily on statistics. Statistics on the proprietary vocational/technical education field, either enrollments or numbers and types of institutions, are difficult to find. The researcher must rely upon estimations not always of current vintage. The dearth of data on proprietary vocational/technical education also makes it difficult to qualitatively define this field. It is difficult to say with certainty to what extent telecommunications are used by proprietary vocational/technical schools. Reference has previously been made of their reliance upon simulated work experience rather than textbook instruction. It is possible, too, that all sources for skill instruction were not covered by the various statistics, a prime example being paramedical specialists trained in hospital settings.

In this study, possibilities within the existing modes have been considered. What is needed is a study of new organizational arrangements which might come about. This will be examined in connection with the overall analysis of opportunities and systems synthesis currently underway in the Center for Development Technology, Washington University.

6. Adult Education: Introduction and Current Status

The United States government estimates that 13,150,000 adult Americans participated in adult educational activities for the year ending in May, 1969. This figure includes full-time students who were outside the scope of this report. Enrollment figures for categories of adult education used within this report include: 1) Adult basic education, 535,613 enrollees for FY 1970,[155] and 2) Adult/continuing education, 6,500,000 enrollees during 1967-68, of which 5,600,000 were engaged in noncredit activities.[156] Included within the FY 1970 adult basic education enrollment figures were 61,226 institutionalized students; increased enrollments in hospitals (9,571 students) and correctional facilities (32,536 students) were recorded.[157]

The 13,150,000 figure offered for adult education is a projection based upon statistical samples to determine the sources used by Americans 17 years of age and over who participated in some form of continuing education. A school setting ranked first with 27.7% of the adult education participants; job training enrolled 27.5%; 13.4% participated via community organizations; 8% enrolled in correspondence courses; 5.8% were tutored; 10.3% engaged in other forms of participation.[158] Adult/continuing education registers most of its students at public institutions; 86.4% of all registrants, or 4.9 million students, were registered at publicly-controlled schools, most likely universities.[159] Television and/or radio was the primary teaching medium for over 6.5% of the adult/continuing education in the public sector and 3% in the private sector.[160]

State grants are the means of converting federal expenditures for program facilities, curricula, staff, and other essential services.[161] During FY 1972, federal appropriations for state grants equaled $51,134,000.[162] Teacher training grants are for institutions training adult educators and other related personnel; during FY 1972, teacher training grants totaled $3 million. Special project grants are let to local educational agencies, including ETV stations, for programs providing a coordinated approach to the target audience or for innovative approaches to adult educational activities.[163] Funding available for special project grants during FY 1972 equaled $7 million. The combined federal expenditure for adult education during FY 1972 was $61,300,000.[164]

6.1 Adult Basic Education

Literacy and fundamental skills fall into the purview of adult basic education. In the five-year period between 1966-1970, $163 million in federal funds was spent on adult basic education for 2,250,000 enrollees.[165] Women and whites have tended to hold the edge in enrollment. Black participation has decreased while ethnic participation has risen. Younger adults have increased their participation to become the most-represented age group. These are

demographic trends perceived from incomplete data reports; reporting techniques were such that financial and enrollment data was precise, but demographic data, particularly pertaining to racial and ethnic participation, was less certain.[166]

The figures for FY 1970 show that ethnic participation (used in this context to mean hispanic minorities; Puerto Ricans, Spanish-surnamed Americans, Cubans, and Mexican-Americans)[167] rose; this is all that can be determined, since no figures were given for changes in white or black participation rates. The highest regional enrollments were registered by the southeast and neighboring areas (i.e., Spanish-speaking territories and boarder states) and the southwest (also with a sizeable Spanish-speaking constituency).[168] Regions of the highest enrollments would help to account for the increase in ethnic participation in adult basic education. High enrollment patterns also imply sizeable black enrollments since the deep south is included with its high black participation.

During FY 1970, adult basic education outlets decreased from 49,516 to 30,402, and class size increased. Use of public school buildings fell from 36,062 to 23,202; use of other buildings declined from 13,454 to 7,200.[169] The use of programmed instruction increased. Instruction was possible in a number of settings; however, it was most likely to take place in a school or institutional setting.[170] Florida and Lancaster County, Pennsylvania, were cited for meritorious innovation for attempts to bring adult basic education to its intended audience by initiating classes in plants after working hours.[171] 1971 marked the debut of "RFD", a coordinated television, radio, and home visitation effort by the University of Wisconsin Extension Division to bring adult basic education to potential students in the four county area surrounding Madison, Wisconsin.[172]

6.1.1 Demographics of the Student Body

Viewed retrospectively from 1970 to its inception, adult basic education is most heavily attended by young adults who are most probably white and female. Between 1968 and 1970, 50% of the total adult basic education enrollment was white (excluding members of hispanic minorities), while black participation decreased from 43% to 38%. Between 1966 and 1970, ethnic participation increased from 13.6% to 15.3%.[173]

Women have always maintained the edge in enrollment. Between 1967-1970, female participation increased from 53% to 57%. Young adults (or those young adults between the ages of 18 and 24) have become the most likely participants. Between 1966-1970, enrollment within that age group increased from 15% to 26%. At the same time, enrollment of students between 45-54 years of age was decreasing from 20% to 13%. Decreasing participation also marked students in the 35-44 and 55-64 age brackets. Students aged 65 and over steadily registered between 2-4% of the total enrollment.[174]

During FY 1970, racial and ethnic participation in adult basic education programs was as follows: 1) white participants corresponded to 0.1% of the total U.S. white population while black and ethnic participants corresponded to almost 1% of the total U.S. black and ethnic population, and 2) total ethnic enrollment rose 16.5% equaling 114,630, of which 39,166 were Mexican-Americans, 36,298 were Puerto Ricans, 31,966 Spanish-surnamed Americans, and 7,208 were Cubans.[175]

During that same year, enrollment by age group showed young adults (students between the ages of 18-24 and 25-34) comprising 53% of the total adult basic education enrollment. The 25-34 year old group had the largest enrollment with 144,513, or 27% of the total adult basic education enrollment. This was followed by the 18-24 year old group with 139,904 enrolled.[176]

6.1.2 Geographic Areas of Strength for Adult Basic Education

Adult basic education has the highest enrollments in the southeastern United States, including in that designation the contiguous border states and territories. There is a spillover of enrollment strength into neighboring states of the southwest. The three regions with the highest enrollments in adult basic education each enroll more students individually than other regions. Also, regional analysis indicates that highest adult basic education enrollments are not always concentrated in areas with high urban population densities.

As of FY 1970, the five states which are the enrollment leaders for adult basic education are California, Florida, Illinois, North Carolina, and Texas. With the exception of North Carolina, each state listed is also one of the ten most populous states in the union. Their total enrollment equals 34% of the national total, or 184,431. In demographic terms, the FY 1970 enrollment of the five leading states was 49% white, 37% black, and the remaining 14% split amongst all other racial and ethnic groups.[177]

The region leading in enrollment is the Southeast; that is Region IV,* (see Figure 3) consisting of Alabama, Florida, Georgia, Mississippi, South Carolina, and Tennessee. This region also leads in black enrollment, with 63% of the total regional enrollment of 93,909. Another Region IV distinction is the highest percentage of female enrollees, with each state having a majority of women as adult basic education students.[178]

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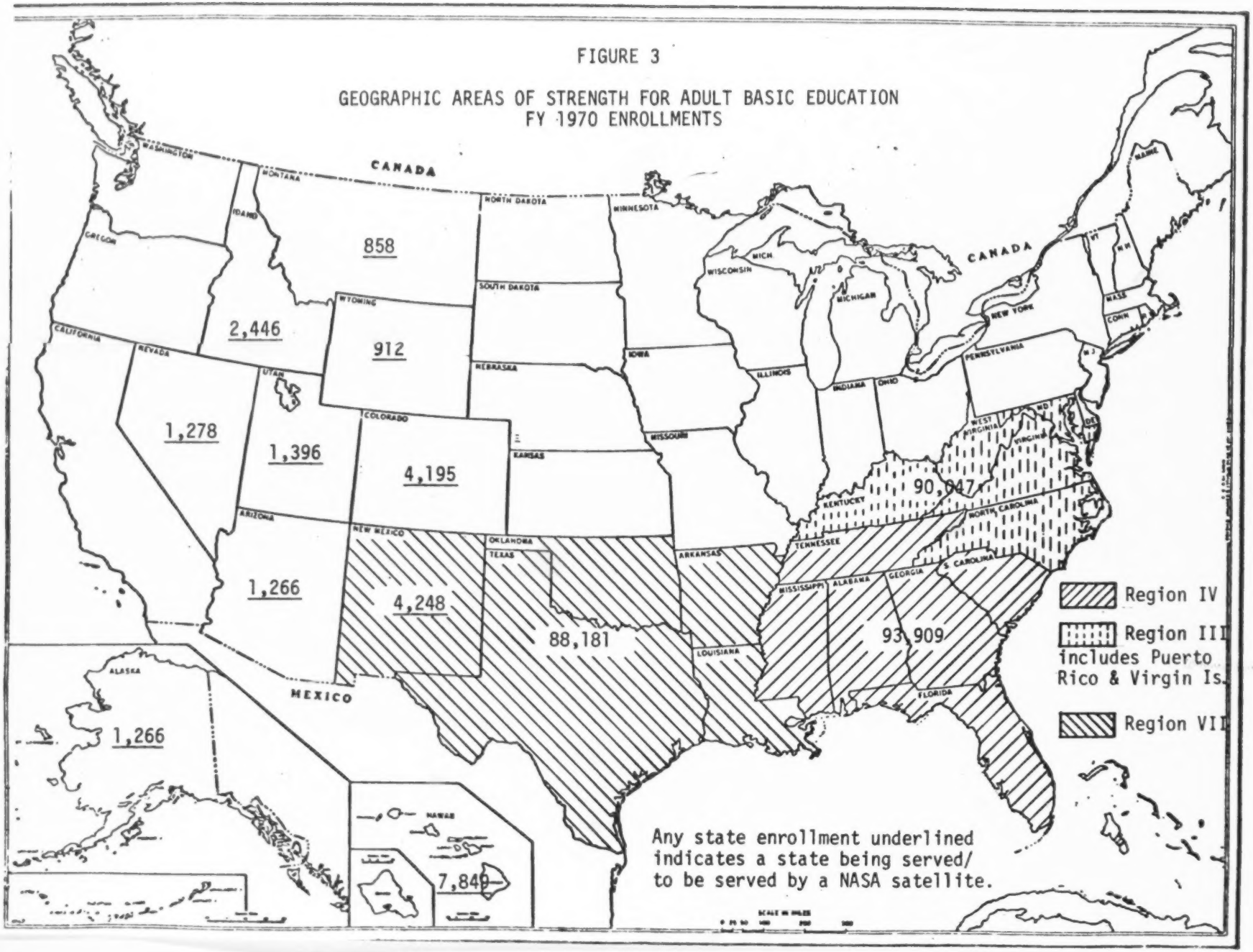
*Beginning with FY 1971 data, the states within each region have been regrouped. As indicated in the text, the regional profiles given are for FY 1970.

FIGURE 3

GEOGRAPHIC AREAS OF STRENGTH FOR ADULT BASIC EDUCATION
FY 1970 ENROLLMENTS



Region III, a border state area, ranks second in adult basic education enrollment with 90,047 enrolled. Region III consists of Kentucky, Maryland, North Carolina, Puerto Rico, Virginia, the Virgin Islands, West Virginia, and the District of Columbia. The region with the third highest adult basic education enrollment is Region VII. Enrollment equals 88,181, and includes the states of Arkansas, Louisiana, New Mexico, Oklahoma, and Texas.[179]

The three high-enrollment regions for adult basic education have more participants, individually, then other regions which include states of high population density. Region II, consisting of Delaware, New Jersey, New York, and Pennsylvania, enrolls only 47,854. Region V, consisting of Illinois, Indiana, Michigan, Ohio, and Wisconsin, enrolls only 68,198.[180]

Special attention should be given to states either currently being served or to be served by NASA satellites. Underlined figures in Figure indicate adult basic education enrollments for these states. Included are the eight states of the Rocky Mountain area, New Mexico, Arizona, Colorado, Utah, Nevada, Wyoming, Montana, and Idaho, plus Alaska and Hawaii which are now being served by ATS-1. None of the states contain large concentrations of adult basic education students. The most sizeable enrollment, 7,849, was registered by Hawaii.[181] The Appalachian states are included in the regions shown, and they do have sizeable adult basic education enrollments.

6.1.3 Location of Adult Basic Education Classes

Adult basic education activities may take place in a number of places. Institutional settings include correctional institutions and hospitals. Community structures include churches, community centers, and schools.[182] Adult basic education may be brought to the job when programs are given in plants so that they will be convenient for after-work attendance. (Florida was cited for a state program of merit for its attempt to bring adult basic education to its target audience by establishing centers at seafood processing plants.)[183]

Classes for institutionalized students have fluctuated in enrollment between 6% and 11% over the four year period of 1967-1970. The high point was reached in 1968 with an enrollment of 15%. In FY 1970, adult basic education institutional enrollment decreased by 7,606 to 61,226. Two types of institutions showed enrollment increases. Correctional institutions registered 32,536 for a 30% increase while hospitals enrolled 9,571 for a 47% increase.[184]

With all this diversity, there was a decrease during FY 1970 in the types of facilities used for adult basic education. Use of public school classes decreased 36% to 23,202 units while use of other types of facilities decreased 54% to 7,200 units.[185]

Concurrently, there was a decrease in the total number of adult basic education classes. The ratio of students-per-class rose from 10 to 17. Programmed instruction is available to adult basic education students, and the number of classes featuring that mode of instruction rose during FY 1970 from 10,141 to 13,164. However, the ratio of students-per-programmed instruction class rose from 8 to 14 at the same time. Student-teacher ratios increased only .9 (from 23.8 to 24.7) in spite of the near doubling of class size; this is accounted for by the National Center for Educational Statistics in terms of better programs, more experienced teachers, and improved scheduling.[186]

6.2 Adult Education

The legislative delineation of adult education is marked by an upward boundary of high school completion. However, the phrase "adult education" is often used to encompass the broad range of educational options available to the out-of-school population. Statistics within this section, taken from Participation in Adult Education, Initial Report 1969, do not distinguish among the exact educational boundaries of participants.* The Initial Report analysed the responses of declared participants from a pre-selected sample in terms of age, race, sex, and source of instruction. The authors caution that participation may be underreported, but they assume that the "...relationships among the population subcategories, nevertheless, could be expected to remain similar," when investigated further by subsequent detailed reports.[187] An estimated 13,150,000 Americans participated in adult education activities.[188]

6.2.1 Demographics of the Adult Education Student Body

Most likely participants in adult education would be white males between the ages of 25-44. In more general terms, adult education involves more men than women, more whites than either blacks or other racial or ethnic groups, and more people under age 35 than over age 35. 18.1% of white men between the ages of 25-34 engaged in adult education, making this the population group with the largest rate of participation. The second-ranking group of participants, with a 11.7% involvement rate, was white men between the ages of 35-44.[189]

Blacks comprised 9.7 of the total U.S. population eligible for adult education, yet their participation rate was 7.5% of all adult education students. Whites equaled 89.3% of the total eligible population, while their participation rate was 91.5%. 1% of adult

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*Although legislation defines the population age-range eligible for adult education as being 16 and over, this survey used 17 years of age as the minimum.

education participants belonged to "other" racial groups.[190] White men participate more than white women only in the 25-34 and 35-44 age groups; black women generally participate in adult education more than black men (the exception being the 65 and over category, where black participation rates were the same for both sexes).[191]

6.2.2 Sources of Adult Education Instruction

Adult education may take place in one, or any combination, of seven settings: public or private schools, job training, correspondence courses, private instruction (tutoring), part time college/university attendance, community organizations, and "other" sources.[192]

Attendance patterns may be discerned. Men tend to participate in adult education via job training and/or correspondence courses. Women tend to participate in adult education via tutoring, public or private school, or community groups. Part-time attendance at colleges or universities or other sources of adult education were equally attended by both sexes.[193]

Blacks were in greater attendance in public or private schools--only.[194] A school setting was the most frequented source of adult instruction with 27.7% of the participants. The order of utilization of the remaining sources is: job training, 27.5%; part-time college/university attendance, 25.2%; community organizations, 13.4%; correspondence courses, 8%; tutoring, 5.8%; and "other," 10.3%. The most participatory group, white men ages 25-34, utilized job training as its most frequent source of instruction with 37.7% of those participants engaged in that form of activity.[195]

The variety of sources available for adult instruction leads to the issue of utilization of more than one source by any one individual. General findings suggest that active participation (by any one subgroup) in adult education may be accompanied by utilization of more than one instructional source. Therefore, men are more likely than women, and whites are more likely than blacks (although "other" races are more likely than whites), and those students under 35 are more likely than those over 35, to use more than one source for adult education instruction.[196]

6.3 Adult/Continuing Education

What is labeled within this context Adult/Continuing Education encompasses the broad range of educational experiences that do not lead to a formal conclusion, i.e., a degree. Adult/continuing education may take the form of a workshop, a course persued for personal enjoyment or interest, or a lecture series--to itemize only a few of the options. The duration of the experience may be a few hours, a few days, a few sessions, or a definite educational period of time (i.e., a semester).

The National Center for Educational Statistics conducted a survey of noncredit activities offered in institutions of higher education during 1967-1968. The survey found 6.5 million registrations for activities of this nature. Of 2,202 institutional responses, 1,102 institutions reported offering noncredit activities. Of the 6.5 million registrants, 5.6 million were engaged in noncredit activities while the remaining .9 million were enrolled in activities that could be credited if the student so chose.[197] By definition, the survey was interested in the activities of the 5.6 million noncredit students.

The National Center for Educational Statistics cautions that the data may be affected by underreporting. Particular reference to radio and TV instruction, offerings of urban and community affair bureaus, refresher courses, short-term professional seminars, offerings of religious institutions, and activities of university extension services constitute areas of underreporting.[198] Since count was made of registrations rather than individuals, there is the possibility of duplication in the data since an individual could be registered for more than one activity. Data tabulation of noncredit activity was done by type of institution and type of instruction. Another survey was planned for the Summer of 1971.

6.3.1 Type of Institution Offering Adult/Continuing Education

The bulk of noncredit registration is at public institutions with 86.4% of the total noncredit registrations, corresponding to an enrollment of 4.9 million.[199] Institutions were classified as either publicly or privately controlled, and as being universities, "other" 4-year programs, or 2-year programs.[200]

Within the public sector, universities enrolled the majority of noncredit registrants (77%). Public 2-year institutions followed in noncredit enrollment with 15% of the total in publicly-controlled institutions. 8% of the noncredit registrations in public institutions were in "other" 4-year schools.[201]

Within the private sector, universities again lead in noncredit enrollments with 52.1%. Noncredit registration at private institutions equaled 40.6% at "other" 4-year schools, leaving 7.3% at 2-year institutions.[202]

Within the public sector, noncredit activities are most available at 2-year institutions, and least available at universities. Within the private sector, noncredit activities are most available at "other" 4-year institutions, and least available at universities.[203]

Although every institutional classification within the survey offered noncredit activities, to a greater or lesser extent, enrollment tended to concentrate in the public sector--particularly at universities and 2-year schools.[204]

6.3.2 Type of Instruction Available in Adult/Continuing Education

Eleven types of instruction used for noncredit activity were identified. They are: correspondence courses, lecture series, discussion groups, short courses, classes, conferences (institutes and/or workshops), seminars, television (both broadcast and closed-circuit), radio, and closed-circuit audio. A separate category labeled "other" was also noted. Generally, the most widely-used method of instruction for noncredit activity was the conference, institute, and/or workshop; the popularity of this mode was irrespective of private or public institution. Lecture series and classes were two prevalent instructional techniques within the privately-controlled institutions, while discussion groups were of greater relative importance within public institutions.[205]

The conference, institute, and/or workshop tends to be associated with 4-year institutions (universities or "other"). 2-year institutions rely more upon the traditional approach of lecture series, classes, and short courses.[206] The remaining methods of instruction accounted for less than 1% of all registrations; however, such methods usually accounted for the greatest innovations. Examples noted were instruction for central-city residents in community action programs, and involved arrangements to guide professionals in research.[207]

Television and/or radio was the primary teaching medium for over 6.5% of the noncredit activity in the public sector and 3% in the private sector.[208] When electronic media were utilized in noncredit instruction, regardless of whether the institution was in the public or private sector, broadcast television was most popular in 2-year institutions, followed by universities, and least used by "other" 4-year institutions. Broadcast radio was most used by "other" 4-year institutions, then by universities, and least used by 2-year institutions. Closed-circuit television was used minimally by all institutions conducting adult/continuing educational activities; both universities and "other" 4-year institutions utilized closed-circuit television for 4% of their electronic instruction, while 2-year institutions used it only 2%. Closed-circuit radio was the least-used of the instructional media; all three types of institutions used it only 1% of the time they utilized instructional media.[209] Broadcast television far outstrips use of closed-circuit television in adult/continuing teaching situations.

Correspondence courses, another type of instructional activity, are not utilized to the extent of instructional electronic media, when measured either in terms of registrations or percentage of total noncredit registrations.[210] Estimated total correspondence registrations for adult/continuing education equalled 37,197 in 1967-1968, of which the lion's share, 29,742, was concentrated at universities.[211] Estimated registrations are based upon 1,102 institutions of higher education reporting noncredit activities (see p. 54 for the parameters of the study and areas of underreporting). The figures cited

previously in this report on correspondence study detailed: 1) estimates of the total (military, extension, and private) size of correspondence enrollments for 1965 and 1966, and 2) the fall, 1970, correspondence enrollment in institutions of higher education divided between degree-credit enrollments (376,089) and non-degree occupational enrollments (28,988).[212] Therefore, the figures cited previously, and the estimates quoted for adult/continuing education correspondence enrollments for 1967-1968, are not exactly comparable.

7. The Media in Adult Education

The examples which follow are large-scale uses of open-circuit television, in conjunction with other media, in bringing education of a compensatory nature to out-of-school adults. The literature accompanying these projects variously refers to each as an example of continuing education, adult education, or adult basic education, within contexts that do not fit neatly into those categories as established within this report. The element common among the programs is education of a compensatory nature, whether this involves rudimentary academic skills, preparing for the high school equivalency examination, or an approach to coping with the demands of daily life in an industrialized society.*

7.1 "RFD"

"RFD" refers to "Rural Family Development," a coordinated, multi-media approach to adult education for rural adults, and the only one of the three examples examined in this section to be aired thus far. Funded by the Office of Education, "RFD" was produced by the University of Wisconsin Extension Division at studios in Madison, and aired over WHA-TV to the surrounding four county area from January through May, 1971. The intent of the program was to reach the target audience with a lively half-hour television program, weekly 3 1/2 minute radio spots, a monthly publication, access to a toll-free Action Line, visits by paraprofessionals, and specially-created learning materials for basic academic skills as requested by the viewer.[213] The instructional goal was to impart living skills and basic academic skills, both in a low-key manner. The ongoing format was not rigidly segmented to permit the maximum flexibility in viewer participation; i.e., the viewer need not fear missing an installment, or two, or more for the programs were not in incremental sequence.[214] "RFD" hoped to reach its target audience, put it at ease about coping shortcomings it may have, help remedy them, and inspire the individual viewer to initiate study of basic academic skills (reading, computation).

Testing devices were created especially for the project. The University of Wisconsin Psychometrics Laboratory developed the Wisconsin Test of Adult Basic Education (to measure basic educational and coping skill achievement), the Wisconsin Adult Attitude Inventory (to determine the subject's alienation, if any, and attitude towards education), and The World About Me (to gauge the actual behavior of the subject).[215] Pretesting of subjects was omitted,** and subjects were located with

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*Note that none of the examples are directed at the compensatory education problem of English as a second language.

**The decision not to pretest was made based upon the assumption that change could be fostered by variables other than the treatment itself, and that the pretest itself could influence the changes revealed in a posttest. Detailed discussion in "RFD" Newsletter, September, 1971.

the help of county officials, agencies, and staff interviews. 100 subjects were selected for division into control and treatment groups which would operate during the 5 month duration of the project.[216] The distinction between groups was a home visit by a paraprofessional; the control group had access to all RFD activities, but the treatment group also was visited by a paraprofessional worker trained by the RFD staff.[217]

Six variables were measured by the three testing instruments. Average scores of the treatment group were higher for five out of the six categories; the greatest difference in mean scores was in coping behaviors, and the difference was in favor of the treatment group. However, there was no significant difference between groups at the .05 level of significance. Change did occur at a lesser level. When the data was analysed to determine at what level a significant difference could be found,* the results indicated that coping behavior within the treatment group probably changed 87 out of 100 times (in contrast to 95 out of 100 times, as implied by the .05 level of significance).[218]

An additional follow-up study was conducted by interviewing participants from each group. Findings were that home visitation increased print media utilization, but did not affect coping skills at the .05 level of significance. The treatment group took more advantage of accompanying printed materials, headed by the home-study component supplied on request.[219] Both the treatment and control groups watched TV and listened to radio to about the same extent.

A more general audience polling was made by sending questionnaires to 2,950 people who requested "RFD" materials by phone, mail, or personal appearance. Based upon a 31% rate of return, it was found that only 18% of the respondents had not had some form of post-secondary education. Since this 18% constituted the target audience, its responses were analysed in comparison to those from the rest of the viewing public. Responses indicated that the undereducated viewer participated more than the educated viewer, enjoyed the programs and materials more, and learned more. The educated viewer, however, was better able to apply knowledge gained from "RFD" than was the target audience. As revealed by questionnaire responses, "RFD" found that it attracted a largely older viewer from its target audience; 54% of target audience viewers were over 55. This finding is unusual since survey data on adult education participants indicates highest participation rates among younger people. An explanation offered for this ironic situation is that the rural tone of the broadcasts appealed to older viewers, whether they were still in a rural environment or had migrated to a city. A viewing survey indicated that viewership was about evenly divided between urban and rural homes, but that the programs still attracted an older audience.[220]

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*The decision to look for a lower level of significance was based upon the assumption that programming and home visitations were of much shorter duration that life-styles and thought habits developed over a lifetime. Detailed discussion in "RFD Newsletter", April, 1972.

The cost component of the "RFD" experiment totaled $8,323.00 per week. Excluding television production, the highest-cost elements were for administrative salaries (including the Action Line supervisor and the home visitor supervisor). The cost of the home visit component was the fourth most expensive item, trailed only by Action Line and Radio spots. The cost per viewer per week may be estimated at $2.61 without the home visit, and $2.82 with the home visit. See footnote, this page, for estimation procedure.*

7.2 The Project of the Kentucky Authority for Educational Television (K.E.T.)

Currently in development is a multi media approach to preparing students for the high school equivalency examination (General Educational Development -- G.E.D.). The G.E.D. is a national examination, available at recognized testing centers, to test the individual's capabilities in social studies, mathematics, English composition, natural sciences, and literature. Successful completion of all five parts of the test entitles the individual to a high school credential which is applicable in the same ways as a high school diploma earned by conventional means (i.e., college or military admission, licensing requirements). Since the G.E.D. is designed for an out-of-school population, testing emphasis is on intellectual facility rather than detailed content. Individual state departments of education establish passing scores to be recognized within that state, and individual colleges determine scores necessary for admission to that institution.[221]

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*The literature consulted for information on "RFD" did not supply figures on the size of the viewing audience (ratings). The viewership base upon which these estimates are figured equals 2,950 people who responded in some way (i.e., requests for materials) to "RFD"; the base included the 50 individuals who received home visits. To arrive at the two cost estimates:

Without Home Visit		With Home Visit	
Viewership Base:	2,950 - Total - 50 - Visited 2,900	Viewership Base:	2,950
Total Weekly Cost	$8,323.00	Total Weekly Cost Including Home Visit:	$8,323.00
less Cost of Home Visit:	- 750.00 $7,573.00		
Cost/Viewer/Week Without Home Visit:	$\frac{\$7,573.00}{2900} = \$2.61$	Cost/Viewer/Week With Home Visit:	$\frac{\$8,323.00}{2950} = \$2.82$

- The total viewership base of 2,950 was reported in the March, 1972 RFD Newsletter as the base for the questionnaire sent by the producers to determine viewer demographic data.

TABLE 11

ESTIMATED WEEKLY COST COMPONENT OF "RFD"

CENTRAL STAFF	
Project Director	$ 300.00
Secretaries	125.00
Office and Administration	250.00
Travel	50.00
TOTAL	$1,075.00
TELEVISION PRODUCTION	
Director	$ 120.00
Producer/Writer and Production Assistants	400.00
Studio Costs	550.00
Talent	175.00
Graphics	73.00
Tape and Recording	934.00
Television Film Production:	
Services	1,100.00
Stock and Processing	796.00
Animation	200.00
Stars	750.00
TOTAL	$5,098.00
ACTION LINE	
One full-time Superviser	150.00
Phone Charges (2 lines in & 2 out)	75.00
Office Expenses	75.00
TOTAL	$ 300.00
RADIO PROGRAMS	
Production of Tapes (10 Stations)	$ 75.00
Personnel	50.00
Office Expense	25.00
TOTAL	$150.00
ALMANAC	
Production	$350.00
Printing (10,000 run)	300.00
Office and Overhead	300.00
TOTAL	$950.00
HOME VISITS	
Full-time Supervisor's Salary	$250.00
Office Expense and Overhead	75.00
Weekly Cost Per Visit	
Visitor's salary $4.50	
Travel 2.50	
Print materials .50	
Overhead 1.00	
Total Per Visit $8.50	
50 weekly visits	425.00
TOTAL	$750.00

Source: "RFD Newsletter", May, 1972.

The Kentucky Authority for Educational Television (KET) is currently engaged in development of a project to prepare viewers for the G.E.D. Funding is from the Appalachian Regional Commission ($127,000) and the Kentucky State Government ($441,000). K.E.T. identifies its potential audience as the 1,422,509 adult Kentuckians lacking a high school diploma, and the 6.5 million Appalachians without a high school credential. Of the eligible Kentucky population, only 6,630 took the G.E.D. during 1971. Working with the K.E.T. will be representatives from the Kentucky State Bureaus of Vocational Education and Instruction, adult education teachers (for the G.E.D.) from the Appalachian counties of the state, and the Corporation for Public Broadcasting.

Attention is being devoted to developing the best ITV strategies for the material, identifying and locating the target audience, developing effective liaisons with other agencies involved in adult education, and "development of other utilization components."[222] An airing date has not been determined.

7.3 Project Strive of ALPS*

Project Strive is not an acronym; it is the title of the first adult education project of the Adult Learning Program Service (ALPS). ALPS was created by the Corporation for Public Broadcasting during the Summer of 1972. Strive's goal is to reach its target audience (those without a high school diploma but with some secondary education) with skills to increase their confidence and increase their interest in continuing their education. STRIVE is not aiming for GED preparation; it is concerned with helping its viewers cope with everyday life problems, make their reading more effective, acquire more confidence so that they may identify and work towards their own goals, improve their mathematical skills, and become interested in the possibilities offered by continuing education.[223]

The target audience for Project Strive totals 8.1 million Americans, or 4% of the total U.S. population. Women outnumber men in the intended audience. (31% of the projected audience will not be in the labor force.) The percentage employed is expected to equal 8% of the total number of people employed who are between the ages of 25-64. The "average" Strive viewer is expected to be white, living in or around a metropolitan area, and a blue-collar worker. 13% of the total projected audience will have income below the poverty level, but the majority (66% of the men) have incomes between $6,000-$10,000 per year. Geographically, the audience is expected to be rather evenly divided among the northeast, mid-east, mid-west, and southern regions of the U.S. It is expected that viewership (measured as a percentage of the total viewership) will be highest in the south, lowest in the west.[224]

Strive will be delivered to its audience in a variety of ways. Essentially, delivery will be via public television, radio, accompanying printed materials, and personal services. The current plan calls for: 35, hour-long, national television programs, with a magazine format, to motivate viewers; 30, half-hour television

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*As this memorandum went to press, there was some uncertainty as to plans for moving forward with Project Strive, after the change in management at CPB during late 1972.

programs to present elements of the basic skills (i.e., mathematics, reading) in a manner relating them to the viewer's everyday life; and radio spots of 5 minutes each to provide further orientation for the audience. The national production components of STRIVE will be buttressed by locally-produced programming that would tie-in national programming with the local scene; this represents yet another attempt to make Strive meaningful for its audience. Another feature of the project will be an attempt at national coordination through trained personnel, printed materials for management at participating stations, organization of local viewing groups, all designed to insure a two-way flow of information. Production will be at public broadcasting facilities, and distribution via the Public Broadcasting Service and National Public Radio; Strive planners aim for a Fall/Winter 1973 debut.[225]

7.4 TV and Computers in Adult Basic Education

The primary current delivery mechanism for adult basic education appears to be face-to-face interaction with a qualified instructor. However, examples of technological delivery may be cited.

Certificates of Merit are awarded to states for their implementation of adult basic education programs. Two of the FY 1970 meritorious programs are worthy of mention: 1) the State of New Mexico used videotape equipment in five centers to help the instructors assess their performance and the students assess their proficiency in English; plans are underway to expand this approach to a statewide basis, and 2) the State of California Department of Education initiated a demonstration project on centralized data compilation; operations were begun with the data processing center of a school district and a 25% sample. The purpose is to help adult basic education administrators in decision making.[226]

Programmed instruction is widely available within adult basic education programs. Availability ranged from all adult basic education classes within four states and one outlying area to another four states and outlying area reporting no students using this mode of instruction. Sixteen states noted that 50% of their adult basic education enrollees were receiving programmed instruction. As defined by the FY 1970 survey of adult basic education by the National Center for Educational Statistics, programmed instruction could involve non-electronic technology. The survey questionnaire considered programmed instruction to be a methodology employing incremental instruction, immediate feedback to the student, and allowing student self-pacing. The questionnaire noted that this methodology could be implemented by a textbook, workbook, or electronic means.[227] Further breakdown of the programmed instruction data, indicating if it was by electronic means, was not provided.

8. Conclusions Regarding the Prospects of Large-Scale Electronic Delivery of Adult Education

The prospects for large-scale electronic delivery of adult education appear to be good. Although adult education may also be subdivided into compensatory education and enrichment education, the curricula is less fragmentized, and large-scale dissemination may in itself prove a boon to utilization.

The market for compensatory adult education, or instruction designed to overcome previous educational deficiencies (i.e., lack of a high school diploma), can be quantified in the millions. The market for adult enrichment education may be less quantifiable, but does exist as evidenced by enrollments in community enrichment courses and the nature of much of the PBS programming. The Public Broadcasting Service estimates its weekly audience at 39 million.[228]

Delivery points include: 1) an institutional setting, meaning anyplace a viewing group for instructional purposes may be organized, 2) the home setting, and 3) the school setting in which adult educators are trained. There are examples of adult education existing or planned delivery to the home; these examples involve a variety of media, and supervision in the form of a home visitor or community-organization intervention. The debut of Project STRIVE of the CPB's Adult Learning Program Service (ALPS), now slated for the last quarter of 1973, will test the efficacy of home delivery of adult education via telecommunications on a national scale and could be the kind of effective demonstration for adult education that "Sesame Street" has proved to be for pre-school education.*

Adult education does not face quite the same problems in public imagery as vocational/technical education. Good promotion, making the concept ubiquitous, could immeasurably aid public acceptance and utilization of large-scale delivery systems. Literature accompanying "RFD", an example of this concept that has been tried in the Madison, Wisconsin area, noted a crucial consideration for efforts of this kind; learning in the privacy of one's home could promote participation since the stigma of being publicly identified as "undereducated" would not be a burden.

Large-scale media usage by adult education becomes evident when a comprehensive approach to reach the target population is mounted, as shown in the preceding three examples. Both RFD and Project Strive are heavily involved in motivation. Whether each program assumes a lethargic population is not expressly stated in its literature;** yet a basic component of both programs is to motivate the individual to continue his education -- with help and materials provided within the programming package. Both RFD and Project Strive

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*See footnote, p. 61.

**The Project Strive literature does have breakdowns on attitudes within its intended audience; the smallest percentage is labeled "resigned". Project Strive Memo, April, 1972, pp. 8,9.

deliberately seek a non-didactic tone hoping that the resulting environment will prove conducive to learning by eliminating condescension and increasing the palatability of continued education.

There are four other features common to all programming packages. The first common element is that each example is constructed to be a multi-media adult education package. Printed materials are created to accompany televised instruction or to meld viewers together. Radio is utilized. Human contact is planned. The human component is the second element common to all the schemes. "RFD," the only project of those examined here which has been aired thus far, utilizes the paraprofessional home visitor. It cannot be determined if this approach will be used by either Project Strive or the K.E.T. proposal. However, each presentation takes into account the need for human interaction over programmed educational materials. Project Strive would hope to organize viewing groups; K.E.T. has not outlined the exact form human interaction will take within their package, but current thought includes working with existing agencies involved in adult education.[229]

All projects either had, or are planning, some degree of involvement with the existing community structure. Coordination with existing adult education agencies, or community groups willing to help, will aid in both promotion and implementation of the project. Working with community groups is the third element common to all examples. The final example of commonality of design is the structure of the learning package, particularly the ITV component. RFD and the KET are interested in achieving a "random entry -- random exit" format, which would allow a viewer to drop-in and drop-out (for a while) without penalty in skill acquisition.

Further work remains to be done to combine the results of this study with potential markets from other educational sectors, e.g. early childhood education, higher education, etc., to see if there is enough of an aggregated market and enough of an educational need to justify investment in a large-scale, educational telecommunications system.

BIBLIOGRAPHY

Chapter 1:

1. Inventory of Vocational Education Statistics Available in Federal Agenices, Office of Education, Department of Health, Education, and Welfare, Washington, D.C. (1970), p. 1.

2. Career Education, Office of Education, Department of Health, Education, and Welfare, Washington, D.C. (1971), pp. 2-3.

3. Evans, Rupert N., "Trends in Secondary School Vocational Education Which are Likely to Affect Postsecondary Education Demands," in Trends in Post-Secondary Education, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (1970), pp. 86, 92.

4. U.S. Commissioner of Ed. Sidney P. Marland, Jr., "Career Education--300 Days Later" (speech before the Annual Convention of the American Vocational Association, Portland, Oregon, December 6, 1971), p. 14.

5. "Where the Action is...Oregon: Clustering," Nation's Schools, 88, No. 6 (December, 1971), p. 44.

6. 20 U.S.C. Sec. 1202(c) (1970 Ed.) Adult Basic Education Program Statistics, Students and Staff Data, July 1, 1969-June 30, 1970, National Center for Educational Statistics, Office of Education, Department of Health, Education, and Welfare, Washington, D.C. (1971), p. 1.

7. 20 U.S.C. Sec. 1202(b) (1970 Ed.).

8. Noncredit Activities in Institutions of Higher Education, Registrations 1967-1968, National Center for Educational Statistics, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (1972), p. 1.

9. Ibid., p. 34.

Chapter 2:

10. "Summary Data Vocational Education Fiscal Year 1970," Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C., pp. i, 1. Mimeo.

11. Belitsky, A. Harvey, "Private Vocational Schools: Their Emerging Role in Postsecondary Education," in Trends in Post-Secondary Education, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (1970), p. 252.

12. MacKenzie, O. et.al., Correspondence Instruction in the United States. New York: McGraw-Hill Book Co., 1968, p. 7.

Belitsky, p. 253.

13. Trends in Vocational Education, Bureau of Adult, Vocational, and Technical Education, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (June, 1971), p. 14.

14. Ibid., p. 14.

15. "Fact Sheet: The Federal Program of Vocational and Technical Education," (July, 1971), Mimeo.

16. Trends in Vocational Education, Bureau of Adult, Vocational, and Technical Education, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (June, 1971), p. 6.

17. Characteristics of Teachers and Students, 1969, National Center for Educational Statistics, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (1970), p. 75.

18. Ibid., p. 4.

19. Trends in Vocational Education, op. cit., p. 7.

20. Ibid., p. 7.

21. Characteristics of Teachers and Students, 1969, op. cit., p. 75.

22. Ibid., p. 75.

23. Trends in Vocational Education, op. cit., p. 6.

24. Ibid., p. 6.

25. Associate Degrees and Other Formal Awards Below the Baccalaureate 1969-70, National Center for Educational Statistics, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (1971), p. 14.

26. Trends in Vocational Education, op. cit., p. 6.

27. "Summary Data Vocational Education Fiscal Year 1970," Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. p. i, Mimeo.

28. Trends in Vocational Education, op. cit., p. 6.

29. Ibid., p. 2.

30. MacKenzie, O. et.al., Correspondence Instruction in the United States, pp. 47-59.

31. Ibid., pp. 7-9.

32. Belitsky, A. Harvey, "Private Vocational Schools: Their Emerging Role in Postsecondary Education," p. 253.

33. MacKenzie, O. et.al., Correspondence Instruction in the United States, pp. 7, 8.

34. Ibid., p. 7.

35. Fall Enrollment in Higher Education 1970, Supplementary Information, Summary Data, National Center for Educational Statistics, Office of Education, Dept. of Health, Education and Welfare, Washington, D.C (1971), pp. 2, 5.

36. MacKenzie, O. et.al., Correspondence Instruction in the United States, pp. 206, 112.

37. Ibid., pp. 206, 207.

38. Ibid., p. 112.

39. College Entrance Examination Board, Frances Coombs Thomson, ed., The New York Times Guide to Continuing Education in America (New York: Quadrangle Books, 1972), p. 778.

40. MacKenzie, O. et.al., Correspondence Instruction in the United States, pp. 203, 204.

41. Ibid., pp. 165-167.

42. Ibid., p. 99.

43. Ibid., p. 98.

44. Ibid., pp. 99, 100.

45. "Most Veterans Not Completing Correspondence Courses More Guidance Needed from the Veteran's Administration, " Report to Congress by the Comptroller General of the United States, Washington, D.C. (March 22, 1972) in ERIC ED 061 514.

46. Ibid., p. 5.

47. Ibid., p. 5.

48. Belitsky, A. Harvey, "Private Vocational Schools: Their Emerging Role in Postsecondary Education," p. 252.

49. Ibid., p. 252.

50. Ibid., pp. 252, 256.

51. Ibid., p. 253.

52. Ibid., p. 256.

53. Peck, Robert D., "Proprietary Schools and Educational Planning. A Staff Report," (Educational Coordinating Council: Salem, Oregon, 1970) in ERIC ED 056 307, pp. 33, 34.

54. Belitsky, A. Harvey, "Private Vocational Schools: Their Emerging Role in Postsecondary Education," p. 256.

55. Ibid., p. 253.

56. Peck, Robert D., "Proprietary Schools and Educational Planning," pp. 6, 33.

57. Ibid., p. 6.

58. Walter Scott, "Personality Parade" in Parade, (June 11, 1972), p. 2.

59. Peck, Robert D., op. cit., p. 6.

60. MacKenzie, O. et.al., Correspondence Instruction in the United States, p. 80.

61. Ibid., pp. 40-42.

62. "Vocational Education in Major Cities; Analysis of Population Enrollment, Teachers, and Expenditures, Fiscal Year 1970," Division of Vocational and Technical Education, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (1970) in ERIC ED 056 195, p. 4.

63. Belitsky, A. Harvey, "Private Vocational Schools: Their Emerging Role in Postsecondary Education," p. 252.

64. 20 U.S.C. Sec. 1135 - 1135a - 4 (October, 1972, Supplement).

65. "Vocational Education in Major Cities; Analysis of Population, Enrollment, Teachers, and Expenditures, Fiscal Year 1970," op. cit., p. 4.

66. Oaklief, Charles, "Revue and Synthesis of Research on Vocational and Technical Education for the Rural Disadvantaged," Office of Education, Dept. of Health, Education and Welfare, (1971) in ERIC ED 058 390, p. 39.

67. "Vocational Guidance Expands Scope," Appalachian Advance, 5, No. 5, (Summer, 1971), pp. 14, 15.

68. "Summary Data Vocational Education Fiscal Year 1970," Office of Education, Department of Health, Education, and Welfare, Washington, D.C., p. 3, Mimeo.

69. Trends in Vocational Education, Bureau of Adult, Vocational, and Technical Education, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (June, 1971), p. 8.

70. Somers, Gerald, et al., "The Effectiveness of Vocational and Technical Programs; A National Follow-Up Survey. Final Report," Office of Education, Department of Health, Education, and Welfare (1971) in ERIC ED 055 190, pp. 198-200.

71. Characteristics of Teachers and Students, 1969, National Center for Educational Statistics, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (1970), p. 11.

72. Ibid., p. 12.

73. Ibid., pp. 2, 11.

74. Ibid., p. 11.

75. Somers, Gerald G. Et al., "The Effectiveness of Vocational and Technical Programs: A National Follow-up Survey. Final Report," op. cit., p. 209.

76. Characteristics of Teachers and Students, 1969, op. cit., p. 13.

77. Ibid., p. 13.

Chapter 3:

78. Evans, Rupert N., "Trends in Secondary School Vocational Education Which are Likely to Affect Postsecondary Education Demands," op. cit., p. 89.

79. "Fact Sheet: The Federal Program of Vocational and Technical Education," (July, 1971), Mimeo.

80. Vocational and Technical Education Annual Report Fiscal Year 1969, Office of Education, Dept. of Health, Education, and Welfare, Washington, D.C. (1971), p. 2.

81. Ibid., p. 1.

82. Ibid., pp. 3, 4.

"Fact Sheet: The Federal Program of Vocational and Technical Education," op. cit.

83. "Fact Sheet: The Federal Program of Vocational and Technical Education," op. cit.

84. Vocational and Technical Education Annual Report Fiscal Year 1969, op. cit., pp. 3, 4.

85. Cochran, Leslie H. Innovative Programs in Industrial Education. Bloomington, Illinois: McKnight and McKnight, 1970, pp. 110, 111.

86. Manpower Report of the President, 1972, Dept. of Labor, Washington, D.C. (1972), p. 141.

87. Ibid., p. 143.

88. Ibid., p. 145.

89. "The Effectiveness of Vocational and Technical Programs; A National Follow-Up Survey, Final Report, op. cit., pp. 4, 205.

90. Characteristics of Teachers and Students, 1969, op. cit., p. 12.

91. "The Effectiveness of Vocational and Technical Programs; A National Follow-Up Survey," Final Report, op. cit., p. 4.

92. Ibid., pp. 192, 195, 197.

93. Ibid., p. 191.

94. Ibid., p. 204.

95. Ibid., p. 194.

96. Manpower Report of the President 1972, op. cit., p. 94.

97. Ibid., pp. 94, 95.

98. Young, Robert C. et.al., Vocational Education Planning: Manpower, Priorities, and Dollars. Columbus, Ohio: The Center for Vocational and Technical Education, 1972, p. 41.

99. Ibid., pp. 52, 53.

100. Ibid., p. 53.

101. Manpower Report of the President 1972, op. cit., pp. 56, 57.

102. U.S. Manpower in the 1970's, Opportunity and Challange, Dept of Labor, Washington, D.C. (1970), pp. 2, 3.

103. The U.S. Economy in 1980, A Summary of BLS Projections, Bureau of Labor Statistics, Dept. of Labor, Washington, D.C. (1970), pp. 22, 23.

104. Ibid., pp. 23, 25.

105. Ibid., pp. 20, 25.
U.S. Manpower in the 1970's, Opportunity and Challange, op. cit., p. 17.

106. The U.S. Economy in the 1980's, A Summary of BLS Projections, op. cit., p. 26.

107. Ibid., p. 25.

108. Ibid., pp. 25, 26.

109. Young, Robert C. et al., Vocational Education Planning: Manpower, Priorities, and Dollars, op. cit., pp. 19, 34.

110. Ward, Dale, "The Proprietary School in Oregan: 1971. A Council Report," op. cit., p. iii

111. Peck, Robert D., "Proprietary Schools and Educational Planning. A Staff Report," op. cit., p. 5.

112. Ibid., p. 27.
Belitsky, A. Harvey, "Private Vocational Schools: Their Emerging Role in Postsecondary Education," op. cit., p. 257.

113. 20 U.C.S., Sec. 1135b - 5(b)(1)(B), (Oct. 1972, Supp.)
20 U.C.S., Sec. 1135b - 6(b), (Oct. 1972, Supp.)
20 U.C.S., Sec. 1135b - 8(c), (Oct. 1972, Supp.)

114. 20 U.S.C., Sec. 1142a(a) (Oct. 1972, Supp.)
20 U.S.C., Sec. 1135b - 5(b)(2), (Oct. 1972, Supp.)

115. The New York Times Guide to Continuing Education in America, op. cit., pp. 71, 74.

116. Peck, Robert D., op. cit., pp. 8-19.

117. Belitsky, A. Harvey, op. cit., pp. 251, 252.

118. Ibid., p. 252
Ward, Dale, "The Proprietary School in Oregan: 1971. A Council Report," op. cit., p. 10.

119. 400 U.S. 965.

120. Belitsky, A. Harvey, op. cit., pp. 253,255.
Peck, Robert D., op. cit., pp. 33, 35.

121. Peck, Robert D., op. cit., p.

122. MacKenzie, O. et al., Correspondence Instruction in the United States, op. cit., p. 79.

123. Peck, Robert D., op. cit., p. 5.

124. Ibid., p. 33.

125. Ibid., p.

126. Belitsky, A. Harvey, op. cit., p. 253.

127. MacKenzie, O. et al., op. cit., p. 79.

128. "Federation of Rocky Mountain States Educational Technology Demonstration Report and Proposal," (July 28, 1972), pp. VII, 23-37.

129. Ibid., p. IX, 3.

130. Ibid., p. IX, 3.

131. "Computerized Vocational Information System," Pamphlet.

132. Martin Katz et al., "Sigi - A Computer-Based Aid to Career Decision-Making," EDUCOM, 7, No. 2 (1972), p. 12-17.

133. Proceedings of the Industrial Training and Education Division of the AECT, Session Entitled "Media in Vocational Education/ Background Notes of Projects on This Session," (Mimeo). Remarks of A.M. Suchesk, Manager Instructional Media and Systems.

134. Pine, Patricia, Shared Services and Cooperatives: Schools Combine Resources to Improve Education (Washington, D.C.: National School Public Relations Association, 1971). p. 34.

135. Ibid., p. 34.

136. Ibid., p. 34.

137. Aerospace Education Foundation, Vocational Instruction Systems of the Air Force Applied to Civilian Education (New York: Praeger, 1971), p. 6.

138. Ibid., pp. 6, 16.

139. Ibid., p. 60.

140. Ibid., p. 13.

141. Ibid., p. 13.

142. Ibid., p. 14.

143. Ibid., p. 7.

144. Ibid., p. 95.

145. Ibid., p. 90.

146. Ibid., p. 90.

147. Ibid., p. 79.

148. Ibid., p. 78.

149. Ibid., p. 78.

150. "NWREL Vocational-Technical Materials Projects," Mimeo. Proceedings of the Industrial Training and Education Division of the AECT, Session Entitled "Media in Vocational Education/ Dissemination Problems," Minneapolis, April 19, 1972, "Background Notes of Projects on this Session," (Mimeo). Remarks of Douglas C. Towne, Project Director.

151. "Background Notes of Projects on this Session," op. cit.

152. Manpower Report of the President 1972, op. cit., p. 93.

153. "USOE's Four Models: In Search of Career Education Complete," Nation's Schools, 88, No. 6 (December, 1971), p. 43.

154. Jerome Moss, Jr., "Assumptions Underlying Preservice Programs for Beginning-Level Vocational Teachers," in Changing the Role of Vocational Teacher Education, ed. Rupert N. Evans and David R. Terry (Bloomington, Illinois: McKnight and McKnight, 1971), pp. 53, 64, 65.

155. Adult Basic Education Program Statistics, Student and Staff Data, July 1, 1969 - June 30, 1970, National Center for Education, Dept. of HEW, Washington, D.C. (1971), p. 14.

156. Noncredit Activities in Institutions of Higher Education, Registrations 1967-68, op. cit., p. 1.

157. Adult Basic Education Program Statistics, Student and Staff Data, July 1, 1969 - June 30, 1970, op. cit., p. 9.

158. Participation in Adult Education, Initial Report 1969, National Center for Educational Statistics, Office of Education, Dept. of HEW, Washington, D.C. (1971), p. 19.

159. Noncredit Activities in Institutions of Higher Education, Registrations 1967-68, op. cit., pp. 4,5.

160. Ibid., p. 11.

161. Adult Basic Education Program Statistics, Student and Staff Data, July 1, 1969 - June 30, 1970, op. cit., p. 1.

162. "Fact Sheet: The OE Program of Adult Education," (July, 1971), Mimeo.

163. Ibid.
Federal Register, Vol. 37, No. 47 - Thursday, March 9, 1972, p. 5055.

164. "Fact Sheet: The OE Program of Adult Education," op. cit.

165. Adult Basic Education Program Statistics, Student and Staff Data, July 1, 1969 - June 30, 1970, op. cit., p. 3.

166. Ibid., p. 3.

167. Ibid., p. 3.

168. Ibid., pp. 14,15.

169. Ibid., p. 7.

170. Ibid. p. 7, 8.

171. Ibid., p. 9, 11.

172. "RFD: Overview," Pamphlet.
"RFD Booklet," p. iii.

173. Adult Basic Education Program Statistics, Students and Staff Data, July 1, 1969 - June 30, 1970, op. cit., p. 3.

174. Ibid., p. 3.

175. Ibid., p. 6.

176. Ibid., p. 6.

177. Ibid., p. 6.

178. Ibid., p. 6.

179. Ibid., pp. 14, 15.

180. Ibid., pp. 14, 15.

181. Ibid., p. 15.

182. Ibid., p. 5.

183. Ibid., p. 9.

184. Ibid., p. 4, 8.

185. Ibid., p. 7.

186. Ibid., p. 7.

187. Participation in Adult Education, Initial Report 1969, op. cit., pp. 1-7, 39.

188. Ibid., "Highlights."

189. Ibid., p. 14.

190. Ibid., p. 14.

191. Ibid., p. 17.

192. Ibid., p. 18.

193. Ibid. p. 18.

194. Ibid , p. 18.

195. Ibid., "Highlights."

196. Ibid., pp. 39, 41.

197. Noncredit Activities in Institutions of Higher Education, Registrations 1967-68, op. cit., p. 1.

198. Ibid., p. 3.

199. Ibid., p. 4.

200. Ibid., p. 6.

201. Ibid., p. 6.

202. Ibid., p. 7.

203. Ibid., p. 7.

204. Ibid., pp. 6, 7.

205. Ibid., p. 11.

206. Ibid., p. 11.

207. Ibid., p. 11.

208. Ibid., p. 11.

209. Ibid., p. 20.

210. Ibid., pp. 16, 17.

211. Ibid., p. 16.

212. Fall Enrollment in Higher Education 1970, Supplementary Information, Summary Data, op. cit., p. 5.

213. "RFD: Overview," Pamphlet.
"RFD Booklet," p. iii.

214. "RFD: Overview," op. cit.

215. "RFD Newsletter," (September, 1971), p. 1.

216. Ibid., p. 3.

217. Ibid., p. 3.

218. "RFD Newsletter," (April, 1972), pp. 2,3,

219. "RFD Newsletter," (May, 1972), p. 2.

220. "RFD Newsletter," (March, 1972).

221. Cornelius P. Turner, ed., A Guide to the Evaluation of Educational Experiences in the Armed Services, (Washington, D.C.: American Council on Education, 1968), pp. 387-390.

222. "Task Force Meeting I - April 6, 7: Summary," Mimeo. Mimeo Outline Project.

223. "Summary of Project STRIVE," (April 15, 1972), Mimeo.

224. Ibid., pp. 5, 6.

225. Ibid., pp. 9-11.

226. Adult Basic Education Program Statistics, Student and Staff Data, July 1, 1969 - June 30, 1970, op. cit., p. 10.

227. Ibid., p. 5.

228. 1971 Public Television Audience Estimates based on Louis Harris Survey.

229. Memorandum, RE: Kentucky Educational Television, GED Project, (August 28, 1972), p. 2.

APPENDICES

Appendix A

Participation in Federal Programs*

"Present public policy in federal legislation on education (as distinguished from transportation, defense and agriculture) limits grants and subsidies to public and non-profit institutions. However, aid to students, either directly or through under contract training is permitted."**

Student aid:

1. Guaranteed Loan Program (Part B) of the Higher Education Act of 1965; as amended; P.L. 90-575.

2. College Work Study Program (Part C) of the Higher Education Act of 1965; as amended; P.L. 90-575.

3. National Defense Student Loan Program (Title II) of the NDEA; as amended; P.L. 90-575.

4. Income Tax Deduction for Student Dependents; 26 USC 151 (e) (4)

5. Cuban Refugee Student Loan Program; 22 USC 2601-04

6. Social Security Student Dependents; P.L. 89-97; see Sec. 202(d) (8) (c)

7. F.E.C.A. Student Dependents; P.L. 89-488; see Sec. 10(M)

8. Railroad Retirement Student Dependents; P.L. 89-700, see Sec. 5 (1) (1)

9. Student Dependency and Indemnity Compensation for Veterans; Children; 38 USC 104, 414 (c)

10. Civil Service Retirement Student Dependents; P.L. 89-504; 5 USC 2251-2268; See Sec. 2251 (j) and Sec. 2260, and P.L. 89-554; Sec. 8341

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*This list is taken from the "Report on Proprietary Vocational Education Schools" of the House Republican Task Force Education and Training given to the House Republican Conference on August 12, 1970. The Task Force Report was included within "Proprietary Schools and Educational Planning" compiled by Robert D. Peck (ERIC: ED 056 307), pp. 33-34.

**Superseded by Education Amendments of 1972.

11. War Orphans Educational Assistance; 38 USC 1701 et seq.

12. Veterans Readjustment Benefits Act of 1966; P.L. 89-358; see Sec. 1652 (c)

13. War Widows Educational Assistance; P.L. 90-631.

14. Vocational Loans to Indians; 25 USC 471

15. Vocational Loans to Eskimos; 25 USC 479

Under contract training:

1. Vocational Rehabilitation Act; 29 USC 31 et seq.

2. Manpower Development and Training Act of 1962; 24 USC 2571 et seq.

3. Indian Adult Vocational Education; 25 USC 309, 452, 823 (c)

4. Economic Opportunity Act of 1964; P.L. 89-794

5. Government Employee's Training Program; 5 USC 4101-4118

6. Economic Development Administration; 42 USC 2583

7. Veterans' Vocational Rehabilitation; 38 USC 1501-1511

8. Vocational Education Act of 1963; P.L. 88-210, Sec. 8 (1)

9. Social Security Title II, Public Welfare Work Training Programs (AFDC); P.L. 90-248.

Appendix B

Fact Sheet
The Federal Program of Vocational and Technical Education

Legislation

Public Law 90-576: The Vocational Education Amendments, Oct. 16, 1968, a revision of the Vocational Education Act of 1963 (P.L. 88-210), authorize Federal grants to the 50 States, the District of Columbia, Puerto Rico, Guam, the Virgin Islands, American Samoa and the Trust Territory of the Pacific Islands.

Purpose: The Act authorizes appropriations to the States for promoting vocational education for all individuals wishing to enter occupational fields. It is intended to assist secondary and post-secondary students, dropouts, high school graduates and those with educational, socioeconomic and other handicaps. These responsibilities are administered by the Division of Vocational and Technical Education in the Office of Education's Bureau of Adult, Vocational, and Techniaal Education.

Funding

Congress determines the appropriations annually. State allocations are determined by a Congressional formula based on the number of persons in the various age groups needing vocational education and the State per capita income. Each State, in order to receive its allocation, must submit a plan describing its present and future vocational education needs and projected programs. States are generally required to match Federal allocations, dollar for dollar. However, the Federal share ranges up to 100 percent for certain parts of the program. Total appropriations available for FY 1972: $513,988,455.

Basic Grants

The States are allocated basic grants to provide opportunities for all persons to become skilled workers, technicians or paraprofessionals in recognized occupations. Fifteen percent of these funds must be spent on postsecondary programs. 15 percent on programs for the disadvantaged and 10 percent for the handicapped. In FY 1972, Federal funds available for basic grants amounted to $383,843,455, including 7.2 million in permanent appropriations under the Smith-Hughes Act of 1917.

Special Vocational Education Programs	Federal Appropriations Available: Fy 1972
	$16,000,000
Exemplary Programs and Projects: For research-based demonstration programs which create bridges between school and earning a living and which broaden occupational aspirations and opportunities for young people, with special emphasis on youth with academic,socioeconomic, or other handicaps. (Half the appropriation is allocated to the States and half is used by the Commissioner of Education for discretionary grants within each State.)	
Consumer and Homemaking: Designed to prepare youth and adults for the role of homemaker and to contribute to their employability in the dual role of homemaker and wage earner. At least one-third of the funds are for economically depressed areas with high rates of unemployment.	25,625,000
Cooperative Education: To provide an alternate work-school program whereby sutdents receive in-school vocational and academic instruction as well as on-the-job work experience related to the student's occupational course.	19,500,000
Work-Study: To provide financial assistance to students who are in need of earnings from employment to commence or continue their vocational education programs.	6,000,000
Special Programs for the Disadvantaged: Designed to help persons with academic or socioeconomic handicaps succeed in the regular vocational education programs.	20,000,000
Other Items: The Act has provided funds for three other activities---research, curriculum development and administrative costs of advisory councils. A total of $9,000,000 has been allocated to the States for research and for support of Research Coordinating Units. Curriculum develop	16,020,000

ment grants by the Office of Education are expected to total near the appropriation for this fiscal year of $4,000,000. (See Advisory Councils below.)

EXPENDITURES

Year	Federal Funds	Total Expenditures (Federal, State and local funds)
1966	$233,793,671	$ 799,894,562
1967	260,320,618	1,004,133,213
1968	262,383,716	1,192,862,965
1969	254,676,376	1,368,756,523
1970	300,045,568	1,841,846,345
1971	412,812,093 (Est.)	Not Available
1972	471,968,455 (Est.)	Not Available

In FY 1968, States matched each Federal dollar with $3.65
In FY 1969, States matched each Federal dollar with $4.37
In FY 1970, States matched each Federal dollar with $5.14.

Enrollments

Year	Enrollment
1966	6,070,000
1967	7,047,500
1968	7,534,000
1969	7,979,000
1970	8,793,960
1971	9,631,250 (Estimated)
1972	10,360,300 (Estimated)

Advisory Councils

The Act requires the establishment of National and State Advisory Councils of Vocational Education. The National Council, consisting of 21 members appointed by the President, was created to advise the Commissioner, to evaluate Vocational Education programs and to make reports to the Congress. It received a separate appropriation of $330,000 in FY 1972. An amount of $2,690,000 was allocated among the States in FY 1972 for support of the State Advisory Councils on Vocation Education.

For Further Information

Contact the Public Information Office, Bureau of Adult, Vocational and Technical Education, U.S. Office of Education, Washington, D.C. 20202, or your nearest Dept. of Health, Education, and Welfare, Regional Director of Vocational Education

Appendix C

Glossary

Personnel

Teachers--staff members who guide and direct the learning experiences of students in subjects relating to the preparation for occupations or groups of occupations.

Students--individuals who receive instruction in a vocational education program under the jurisdiction of a school or school system.

Adults--individuals who have reached a specified minimum legal age of adulthood, usually 18 years.

Minority groups--includes American Indians, Negroes, Orientals, Spanish-surnamed Americans. In this survey, the student identified himself as belonging to a specified race or ethnic group.

White-collar worker--includes Census classifications of occupations as follows: professional, technical, and kindred workers; managers, officials, and proprietors, except farm; clerical and kindred workers; and sales workers.

Blue-collar workers--includes Census classifications of occupations as follows: craftsmen, foremen, and kindred workers; operators and kindred workers; private household workers; service workers except private household; farmers and farm managers; farm laborers and foremen; and laborers, except farm and mine.

Schools

Regular/comprehensive/secondary--a secondary school with a number of departments (e.g., English, science, business, vocational) offering a diversified program to meet the needs of pupils with varying interests and abilities.

Technical institute--an institution, or a division of an institution, offering instruction primarily in one or more of the technologies at the postsecondary level.

Vocational and/or technical high school--a secondary school which is separately organized and administered for the primary purpose of offering education and training in one or more of the technical occupations.

Community or junior college--A junior college is an institution of higher education which offers usually the first 2 years of college instruction, which frequently grants an associate degree and does not grant a bachelor's degree. It is either an independently organized institution or a community institution which is a part of a public school system. Offerings include college transfer courses and programs; and/or vocational, technical, and semiprofessional occupational programs or general education programs at the postsecondary instructional level. (This is a modification of the definition for Junior College in Handbook VI.)

Educational level

Secondary Vocational--vocational education instruction commencing at termination of elementary school, and provided to students up to and including grade 12 or its equivalent.

Postsecondary vocational--vocational education instruction provided to students beginning with grade 13 or its equivalent and leading to a degree or certificate below the baccalaureate.

Adult vocational--vocational education instruction provided to out-of-school youth or adults.

Ungraded--vocational education instruction which has no standard grade designation. Such a class is likely to contain pupils of different ages who may be identified according to level of performance.

Program

Vocational Education Program--formal instruction which prepares students for initial entrance into or upgrading, retraining, or advancement within an occupation or occupational field.

Agriculture--instruction concerned with knowledge and skills in the function of agricultural production, agricultural supplies, agricultural mechanization, agricultural products (processing), ornamental horticulture, forestry, agricultural resources, and the services related thereto.

Distribution Education--instruction concerned with knowledge and skills in the field of distribution and marketing, including selling, and such sales-supporting functions as buying, transporting, storing, promoting, financing, marketing research and management.

Health Occupations--instruction concerned with assisting qualified personnel in providing diagnostic, therapeutic, preventive, restorative, and rehabilitative services to people, including understanding and skills essential to provide care and health services to patients.

Home Economics--instruction concerned with knowledge, understanding, attitudes, and skills relevant to (a) personal, home, and family life, and (b) occupational preparation using the knowledge and skills of home economics.

Office Occupations--instruction concerned with career objectives in selected office occupations such as recording and retrieval of data, supervision and coordination of office activities, internal and external communication, and the reporting of information.

Technical Education--instruction, usually at the postsecondary level, which normally includes the study of the underlying sciences and supporting mathematics inherent in a technology, as well as methods, skills, materials, and processes, and the acquisition of extensive knowledge which is required in a field of specialization. A student is prepared for an occupational area between a skilled craftsman and a professions.

Trades and Industrial Occupations--instruction concerned with training in skilled or semiskilled occupations such as testing, maintaining, servicing, or repairing any product or commodity. Included are basic manipulative skills, safety, related mathematics, drafting, and science, and shop or laboratory experiences simulating those in industry and classroom.

Cooperative education--a combination probram of study and practice--conducted on an alternating schedule of half days, days, weeks or other periods of time--providing legal employment for pupils with organized on-the-job training and correlated school instruction.

Work-study program--an arrangement whereby a full-time student, who is 15 to 20 years old and is in need of earnings, works for no more than 15 hours per week in a Federal, State, or local agency.

Apprenticeship program--a program of studies of occupational preparation for skilled trades as authorized by State and Federal legislation and usually conducted under the auspices of a local joint apprenticeship committee representing labor, management, and the school.

Other

Course--an organization of subject matter and related learning experiences provided for the instruction of pupils on a regular or systematic basis, usually for a predetermined period of time.

Class--a group of pupils assigned to one or more teachers for a given period of time for the purpose of instruction in a situation where the teacher(s) and the pupils are in the presence of each other.

Occupational field--a group of recognized occupations having many similarities including type of work performed, basic aptitudes, and acquired knowledge and training required; tools, machines, instruments, and other equipment used; and basic materials used.

Special needs--deficiency in one or more of the cultural, economic, environmental, physical, or mental aspects that may adversely affect the school performance or learning ability of an individual

Source: Vocational Education, Characteristics of Teachers and Students, 1969.

Appendix D

Fact Sheet
The OE Program of Adult Education

Legislation

Public Law 89-750, Title III: The Adult Education Act of 1966, as amended, was further amended by Public Law 91-230, Title III. Cited in the law as the "Adult Education Act," this Act authorizes appropriations of Federal Funds for the 50 States, the District of Columbia, Puerto Rico, Guam, the Virgin Islands, American Samoa, and the Trust Territory of the Pacific Islands. It also provides for discretionary grants to institutions of higher education, State or local educational agencies or other appropriate public or private agencies or organizations.

Purpose: The purpose of the Act is to establish and expand programs of Adult public education so that adults can continue their education through completion of secondary school and secure job training to help them become more employable, productive and responsible citizens.

Funding

Congress determines the appropriations annually, based on authorizations in the Act. Each State, in order to receive its allocation, must submit and obtain approval of a plan describing its present and future adult education needs and projected programs. Not less than 10 percent nor more than 20 percent of the total appropriation in reserved for special projects and teacher training projects; 2 percent of the remainder is reserved for outlying territories; a $150,000 basic grant goes to each State and the District of Columbia, and the remainder is allotted to the States on the basis of a statutory formula which takes into account the number of adults who do not have a certificate of graduation from a secondary school, or the equivalent, and who are not currently required to be enrolled in school. The matching requirement for the State grant program is 10% non-Federal and 90% Federal except for the Trust Territory of the Pacific Islands which is 100% Federal. Special projects also have a matching requirement of 10% of the cost of the project. There is no matching requirement for teacher training projects. Total appropriations for FY 1972: $61,300,000.

Basic Grants

Grants are made to States to pay the Federal share of the cost of establishing or expanding adult education programs in local educational agencies and private nonprofit agencies. Federal appropriations for State grants totaled $51,134,000 in FY 1972.

Special Adult Education Programs	Federal Appropriations Available: FY 1972
Special Project Grants: Grants are made to local educational agencies or other public or private nonprofit agencies, including ETV stations, for special projects which promote comprehensive or coordinated approaches to the problems of adults who have not achieved a high-school diploma or its equivalent.	$7,000,000
Teacher Training Grants Grants are made to institutions of higher education, State or local educational agencies, or other public or private agencies or organizations to support training programs for adult education personnel and for persons preparing to work in adult education.	3,000,000

EXPENDITURES - State Grants

Year	Federal Funds	Total Expenditures (Federal, State and local funds)
1968	$29,461,428	$38,872,531
1969	34,608,285	46,368,111
1970 (est.)*	38,063,155	50,523,983
1971 (est.)	44,866,102	not available

OBLIGATIONS - Special Projects

Year	Federal Funds
1968	$6,550,000
1969	6,999,707
1970	7,899,838
1971	6,639,003

OBLIGATIONS - Teacher Training

Year	Federal Funds
1968	$1,500,000
1969	2,000,000
1970	1,980,637
1971	3,360,016

ENROLLMENT

Year	State Grant Program	Special Projects	Teacher Training
1968	455,730	39,300	2,075
1969	484,626	42,000	3,200
1970	535,613	48,000	1,727
1971	606,00 (est.)	41,000	2,800 (est.)

*Estimate figures subject to change pending acceptance of final reports.

Advisory Council

The Act requires the establishment of a National Advisory Council on Adult Education. The Council, consisting of 15 members appointed by the President, advises the Commissioner of Education, reviews the administration and effectiveness of the adult education programs, and reports annually to the President on its findings and recommendations. In FY 1972, $166,000 of the total appropriations was reserved for the Council.

For Futher Information

Contact the Public information Office, Bureau of Adult, Vocational, and Technical Education, U.S. Office of Education, Washington, D.C. 20202, or your nearest Department of Health, Education, and Welfare, Regional Office, Attention: Director of Adult, Vocational, and Technical Education.